

FEDERAL COURT

B E T W E E N:

SAMUELSON-GLUSHKO CANADIAN INTERNET POLICY

AND PUBLIC INTEREST CLINIC

Applicant

- and -

ANKIT SAHNI

Respondent

RESPONDENT'S RECORD

July 16, 2025

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Federal Court
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Toronto, ON
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AND TO: **SAMUELSON-GLUSHKO**
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TAB 1

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B E T W E E N:

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AFFIDAVIT OF ANKIT SAHNI

I, Ankit Sahni, residing in the city of New Delhi, India, SWEAR AND SAY THAT:

1. I am the person who, in concert with the generative artificial intelligence (AI) model called RAGHAV Artificial Intelligence Painting Application ("RAGHAV"), created the artwork entitled SURYAST, and as such have personal knowledge of the following, except where stated to be based on information and belief, in which case I believe the same to be true.

The Creation of SURYAST

2. As explained in the Affidavit of Raghav Gupta, the AI model RAGHAV accepts two inputs from the user before generating an image. One input image is the "style input", and the other is the "content input."

3. When I created SURYAST, I used an original photograph taken by me in 2020 using my phone's camera as the content input. The photograph is provided below for reference. I am the sole author of the photograph below.

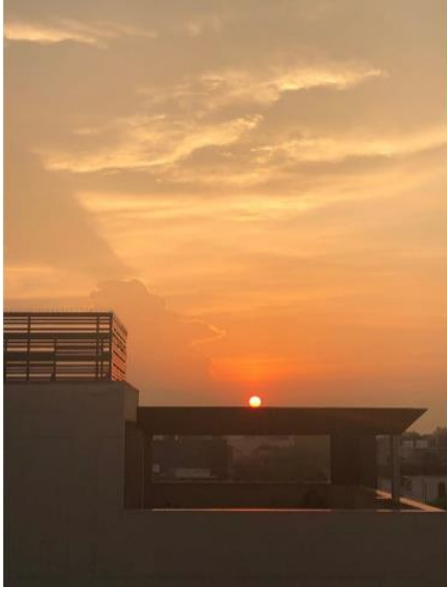


Figure 1: Photograph taken and owned by Ankit Sahni; provided as the content input to RAGHAV

4. I took the photo in Figure 1 with the intention of using it as the content image for SURYAST. I deliberately included features in this photo such as the sunset, clouds, and the contours of a building, and framed it in such a way so that the sky accounts for the upper two thirds of the work.

5. For the style input, I selected Vincent van Gogh's painting titled *The Starry Night*, which is provided below for reference.



Figure 2: The Starry Night by Vincent van Gogh; used by Ankit Sahni as the style input to RAGHAV

6. The original painting of *The Starry Night* was created in 1889, and the artist, Vincent van Gogh, died in 1890.

7. In selecting *The Starry Night* as my style image, I considered the particular patterns and brushstrokes contained in the image, the ability of RAGHAV to learn them, and the similarity of features in both the content and style images (such as the sky, the buildings, etc.).

8. After inputting both the content and style images into RAGHAV, I exercised my discretion to select a variable value, which determined the amount of style transfer between the content and style images in RAGHAV. The process by which style transfer occurs is explained in paragraphs 12 - 22 of the Affidavit of Raghav Gupta.

9. My choice of variable value in this case took into account the precise and deliberate style of van Gogh's *The Starry Night* and considered how the features of the style image would merge with the features of my content image.

10. The choice of content and style images and the selection of the variable value are completely arbitrary decisions, and are a culmination of my independent artistic expression and discretion.

11. The output image produced from this process, which I titled SURYAST, is provided below.

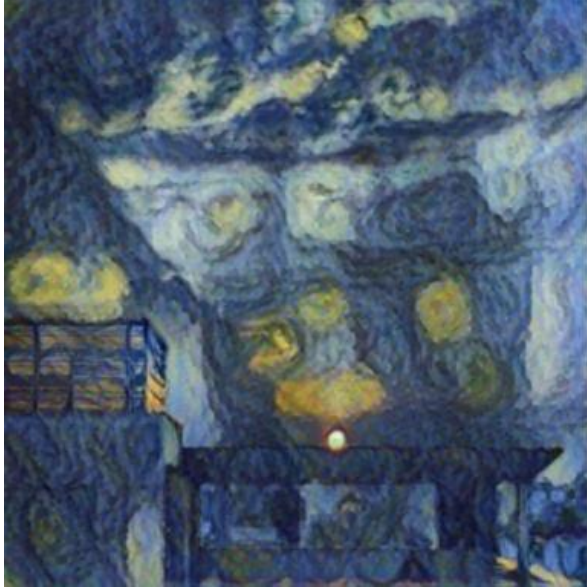


Figure 3: SURYAST (Hindi word for sunset); generated with the assistance of RAGHAV

12. Though SURYAST was created in or about 2020 as a result of my inputs and decisions, the interpretation of my inputs to create this specific image was performed by RAGHAV.

13. RAGHAV's contribution to the creation of SURYAST is distinct, disparate and independent from my contribution in the subject artwork.

Registering Copyright in SURYAST

14. I registered copyright in SURYAST in Canada on December 1, 2021 (Registration #: 1188619).

15. Both RAGHAV and I contributed to the creation of SURYAST. I believe it would be neither accurate, nor honest, to describe myself as the sole author of SURYAST.

16. Due to this fact, I named both myself and RAGHAV as authors of SURYAST, on SURYAST's copyright registration, but named myself as the sole owner.

17. SURYAST is an artwork produced as a result of own artistic creativity, and both RAGHAV and I played essential roles in creating SURYAST.

AI “Decision Making”

18. As an example of how AI makes determinations in output, I engaged ChatGPT (ChatGPT by OpenAI, version 4.0) to provide an explanation of how a generative AI “makes decisions” when creating an artwork from prompts.

Exhibit A: Chat GPT Explanation

19. As a graphic example of this decision-making process, I engaged ChatGPT to create outputs using the identical input prompts on multiple occasions. Each time, the output provided (a) a variation of output; and (b) corollary changes to the output that were not requested in the prompt (Figure 4).

Test 1

ChatGPT (09th May 2025 2234 hrs IST)



Turn us into anime

ChatGPT

Image created



Make us both hold a glass of champagne in one hand

Image created



Make us toast

Image created



Test 2

ChatGPT (09th May 2025 2243 hrs)



Turn us into anime


Image created



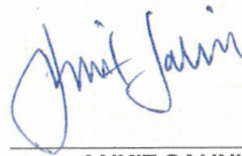


Figure 4: Chat GPT Image screenshots

SWORN remotely by Ankit Sahni)
 stated as being located in the City)
 of New Delhi in the Country of India,)
 before me at the City of Toronto)
 in the Province of Ontario, on)
 May 12, 2025, in accordance with)
 O. Reg. 431/20, Administering)
 Oath or Declaration Remotely.)



Commissioner for Taking Affidavits



ANKIT SAHNI



This is Exhibit "A" to the Affidavit
of Ankit Sahni, sworn before
me this 12th day of May, 2025.



Commissioner for Taking Affidavits
LSO #: 84831V



Can you tell me how a generative AI would “make decisions” when creating an artwork from prompts, and specific examples? It seems that sometimes when an AI is asked to make changes to one feature of a work, other aspects get changed as well. What leads the AI to change things outside the scope of the request?

That’s a great question — and it gets to the heart of how generative AI models like DALL·E or Stable Diffusion “create” images.

How Generative AI “Makes Decisions”

Generative AI doesn’t make decisions the way a human artist would, with conscious intent. Instead, it operates probabilistically, based on patterns learned during training. Here’s how it typically works:

- 1. **Training:** The AI is trained on vast datasets of images paired with text descriptions (e.g., “a red apple on a table”). It learns associations between visual features and words.
- 2. **Prompt Interpretation:** When you give a prompt (e.g., “a futuristic city at night”), the model converts the text into a high-dimensional representation (embedding) that reflects what it has learned such prompts usually mean.
- 3. **Image Generation (Sampling):**
 - For models like DALL·E, the image is generated from scratch via a learned mapping from text embeddings to image pixels.
 - In models like Stable Diffusion, an image is generated by starting with noise and refining it step-by-step, guided by the prompt and latent space patterns.
- 4. **Latent Space Dynamics:** The model operates in what’s called a “latent space” — a compressed abstract representation of images. All features of an image (e.g., color, composition, lighting, object style) are entangled in this space. This entanglement is key to your question.

Why Unrelated Aspects Get Changed

When you ask the AI to modify **one aspect** of an image (say, “make the cat’s eyes blue”), other parts may change too (e.g., the cat’s pose or background). This happens due to:

1. Feature Entanglement

In the latent space, many features are not cleanly separated. Changing “blue eyes” might subtly pull other features along — because in training data, cats with blue eyes may often appear in specific contexts (e.g., indoors, certain breeds, lighting conditions).

2. Lack of Memory or Anchoring

Most image generation models don’t “remember” a previous image when editing. Even in “inpainting” workflows, changes are guided by new prompts, and the model must regenerate the entire image (or large portions) probabilistically. Slight prompt changes can yield major visual shifts.

3. Sampling Variability

These models use stochastic processes (randomness) when sampling — even with the same prompt, you can get different results. So a small change to the prompt can tip the balance and affect other areas due to this inherent randomness.



Examples

Example 1: “Add glasses to a man’s face”

- Intended change: Only add glasses.
- Actual result: The man’s hairstyle changes, background gets blurrier.
- Why? The model doesn’t isolate features. It generates a *new* image that’s likely to include glasses — and in doing so, it redraws related elements to match its statistical patterns for “men with glasses.”

Example 2: “Turn the sky orange” in a beach scene

- Intended change: Just sky color.
- Actual result: The ocean might also become more reflective, or the scene becomes warmer overall.
- Why? Orange skies are associated with sunsets or sunrises, which often come with warmer tones across the whole image.

In Summary

Generative AI “decisions” are shaped by:

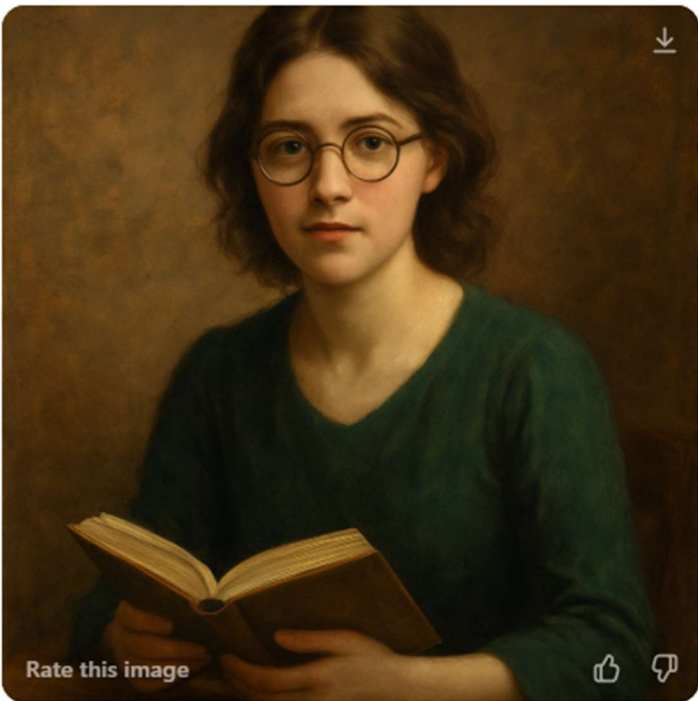
- The correlations it has learned from data.
- The entangled representation of image features.
- Probabilistic (non-deterministic) generation processes.

So when you ask for a change, the AI isn't being careless — it's just that, in its learned world, the feature you're changing is rarely seen in isolation.

Would you like a visual example of one prompt and how small changes affect the output?

I'd love a visual example and your explanation on how this compares to human creativity

Image created



And your explanation, please, on how this compares to human creativity

Certainly. Comparing generative AI to human creativity reveals both fascinating similarities and fundamental differences:

1. Process vs. Intention

- **AI:** Generates based on *statistical associations* learned from training data. It doesn't "intend" to create something meaningful—it produces what is statistically likely based on prompts and patterns.
- **Humans:** Create with *intent, memory, emotion, and context*. An artist might add glasses to suggest intellect, nostalgia, or character development, not just as a visual element.

In the image above, the AI rendered a young woman with round glasses and a book—classic visual markers associated with introspection and learning. But it *chose* these markers not from concept or story, but because in its training data, those features often co-occur with prompts like “calm woman reading.”

2. Consistency and Control

- **AI:** Changes are often *non-local*. Asking it to change one detail (e.g., her hairstyle) may unintentionally alter others (e.g., lighting, mood). That's because all features are interconnected in its “latent space,” with no hard boundaries.
- **Humans:** Can isolate features. An illustrator can change only the hairstyle while keeping everything else the same, because they possess *selective control* and understand the *hierarchy* of elements in the composition.

3. Abstraction and Meaning

- **AI:** Understands *form*, not *meaning*. It doesn't know *why* the woman is reading or *what* the book represents.
- **Humans:** Embed meaning. A human might use color, pose, and lighting to express a narrative—melancholy, discovery, solitude. Each choice is tied to a personal or cultural frame of reference.

4. Novelty and Constraint

- **AI:** Good at *interpolating* between known styles or forms. It's less adept at true innovation unless prompted cleverly (or fine-tuned).
- **Humans:** Can work *against* training, break rules, express inner contradictions. They can intentionally subvert expectations, invent new styles, or even question the act of creation itself.

Summary

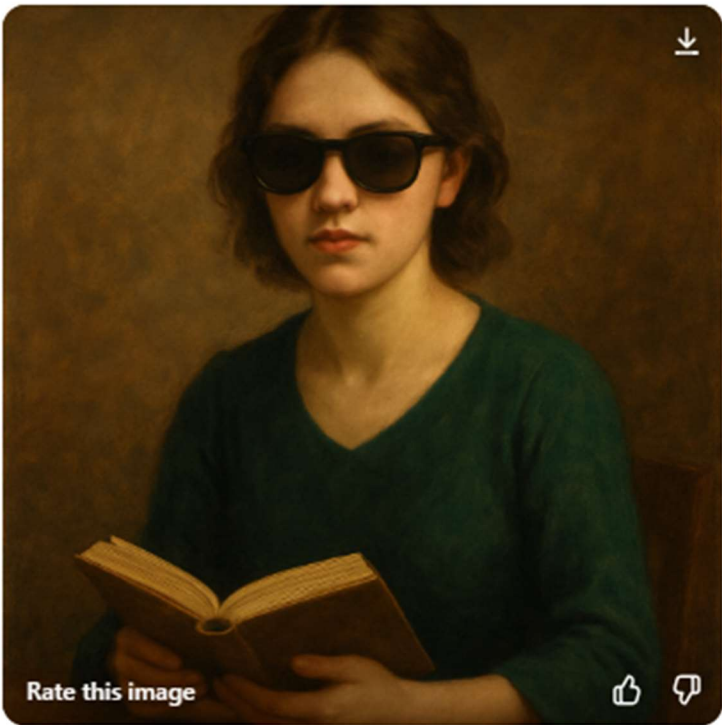
Aspect	Generative AI	Human Artist
Basis of creation	Statistical pattern matching	Intentional thought and feeling
Feature control	Entangled, probabilistic	Disentangled, conscious
Meaning	Implicit, learned from correlations	Explicit, derived from lived experience
Innovation	Emergent within learned boundaries	Often disruptive, boundary-breaking

In short, generative AI is like a hyper-competent mimic—it creates from patterns, not purpose. Humans create from a blend of cognition, culture, and conscience. Both are capable of beauty, but for very different reasons.

Would you like me to generate a modified version of the same painting (e.g., change glasses to sunglasses) to show how the rest of the image might change too?

Yes please!

Image created



Alright so let's make the woman fashionable. Her attire should be inspired by high fashion, and be vibrantly coloured. It should not be associated with any particular religion or country, but it can be inspired by fashion outside of North America if you wish. I'd like you to decide on that part.



Can I ask why you chose this colour combination, and why the headgear?

Great question. Here's the reasoning behind those choices:

1. Colour Combination: Magenta, Orange, and Teal

I chose this palette because:

- **Vibrancy:** The prompt called for high fashion and boldness—magenta and orange are high-energy, attention-grabbing hues often used in runway fashion to convey confidence and individuality.
- **Contrast:** Teal balances the warmth of magenta and orange with cooler tones, creating visual harmony without dulling the vibrancy.
- **Textile richness:** These colors are frequently found in luxurious brocades, silks, and modern couture inspired by global textile traditions.

This palette avoids associations with any one religion or national identity, while still referencing the global language of high fashion.

2. Headgear Choice

The headwrap-style accessory was chosen because:

- **Elegance and Structure:** In fashion, headwraps are used to add silhouette drama and poise. It echoes the aesthetic of haute couture where headwear often frames the face and adds verticality.
- **Global Inspiration:** While not specific to any culture in this case, the wrap style nods to fashion influences from Africa, the Middle East, and South Asia—all of which have inspired global runway trends.
- **Stylistic Continuity:** The colors and fabric texture were matched to the outfit to create a unified, fashion-forward look.

The idea was to reinterpret classical portraiture through a high-fashion lens—honoring tradition in form but pushing style and expression into a modern, globally aware space.

Would you like to experiment further with the concept—maybe try a minimal, avant-garde look next?

Ok let's play around. Can you please make the decisions on how to implement the prompt, copied again here below?

Alright so let's make the woman fashionable. Her attire should be inspired by high fashion, and be vibrantly coloured. It should not be associated with any particular religion or country, but it can be inspired by fashion outside of North America if you wish. I'd like you to decide on that part.



Can I ask why you made the choices you made?

Absolutely — here's the rationale behind the creative choices:

Fashion Direction: Global Avant-Garde Minimalism

I chose a minimalist, high-fashion aesthetic inspired by global avant-garde movements (like those seen in Japanese and Scandinavian fashion), which favor striking silhouettes, bold shapes, and restrained yet vibrant palettes. This style is cosmopolitan but deliberately unmoored from specific cultural or religious symbolism.

1. The Outfit

- **Silhouette:** A sculptural, structured outfit with sharp tailoring and exaggerated shapes was selected to evoke high fashion while remaining elegant.
- **Color Palette:** Vibrant but balanced tones — a vivid saffron yellow and electric plum — were used to meet the “vibrantly coloured” prompt without leaning on culturally coded color schemes.
- These choices convey a sense of daring sophistication without relying on regional costume cues.

2. The Headgear

- The headpiece is **non-traditional**, referencing fashion editorials and couture runway accessories rather than religious or cultural garments.
- It serves a dual purpose: sculptural drama (a common trait in high fashion) and a frame for the face, adding visual interest without cultural specificity.

3. Overall Styling

- **Sunglasses:** The angular, oversized sunglasses are a nod to retro-futurism and haute couture styling—a common motif in fashion photography that emphasizes cool detachment and mystery.
- **Pose & Setting:** The posture remains poised and composed, reflecting the timeless dignity of classical portraiture while the styling recontextualizes it.

The goal was to create an artwork that blends the formal, contemplative structure of a classical oil portrait with the expressive boldness of international high fashion—without referencing any one tradition too closely.

Would you like to explore a different high fashion angle—say, something whimsical or ultra-modern next?

What made you choose Japanese and Scandinavian fashion?

Great question — the decision to draw on Japanese and Scandinavian fashion influences was guided by your request for:

- High fashion
- Vibrant colour
- Global inspiration
- Avoiding religious or national symbolism

These two fashion traditions offered the best intersection of those qualities, while staying conceptually neutral.

Why Japanese Avant-Garde Fashion?

Japanese designers like Issey Miyake, Yohji Yamamoto, and Rei Kawakubo (Comme des Garçons) have been pioneers in:

- Deconstructing form — sculptural silhouettes, unusual draping, and abstract shapes.
- Non-verbal storytelling — garments as wearable art, rather than cultural signifiers.
- Minimalism and maximalism combined — clean lines paired with bold, expressive flourishes.
This makes it a great foundation for creating fashion-forward looks that are *not* tied to cultural symbolism yet deeply artistic.

Why Scandinavian Fashion?

Scandinavian (especially Danish and Swedish) fashion is known for:

- Modern minimalism — structured but simple design with functional elegance.
- Unexpected use of colour — while often muted, recent trends have embraced bold color blocking in tasteful, refined ways.
- Global neutrality — it reads "modern cosmopolitan" without leaning on cultural codes.

Together: A Perfect Balance

By blending:

- Japanese sculptural expression
- With Scandinavian minimal clarity
...we get a visually rich but culturally neutral aesthetic—just what your prompt called for.

Would you like me to push this even further—maybe by introducing elements from Afrofuturism or experimental South American design next, for a different global interpretation?

Avoiding tropes and cliches, please now modernize the last picture.



Excellent follow-up. Here's the reasoning for how this version modernizes the concept while avoiding tropes and clichés:

1. Contemporary Minimalist Fashion

- **Material & Cut:** The sleeveless ribbed turtleneck replaces the heavy, theatrical fabric with a casual yet polished contemporary material. This feels more "today"—something worn by a modern creative or professional rather than a staged fashion editorial.
- **Simplicity:** Minimalist, clean lines are the hallmark of current understated high fashion. The focus shifts to shape and fit, not ornamentation.

2. Color Blocking Without Overstatement

- **Vivid Yet Grounded:** Orange remains bold, but now it's paired with neutral, natural textures in the background and accessories, preventing the look from tipping into caricature or editorial exaggeration.
- **Timeless vs. Trendy:** While bright, the outfit feels plausible in a real-world urban or creative setting—not just a runway or gallery.

3. Subtle Accessories

- **Gold Hoop Earrings:** Small, simple, and timeless—avoiding overt symbolism or excessive drama, but adding personality and modernity.
- **Updated Sunglasses:** The sleek design remains, grounding the look as fashion-forward yet realistic.

4. Shift in Tone

By removing overworked textures and theatrical headgear, this portrait feels **present-day and relatable**, as though it could be a photo of someone from today's cultural or design community—effortlessly stylish, not costumed.

Would you like me to now push it toward a futuristic or tech-inspired style?

What made you choose this outfit, and why the colours orange and maroon

Excellent observation. Here's the thinking behind those two choices:

Why This Outfit?

I wanted to *strip away performative or theatrical elements* and bring the composition into something that feels *lived-in* and *wearable today*, yet *still distinctly stylish*. Specifically:

1. Sleeveless Ribbed Turtleneck

- This style is timeless but currently on-trend in fashion communities that favour functional elegance — think creatives, designers, and tech professionals.
- The ribbed texture gives it depth without needing patterns or embroidery, modernizing the previous flat, painted fabric.
- It looks confident without being too "styled," making the character feel more natural.

2. Clean Minimalism

- I intentionally kept it devoid of necklaces, embroidery, or loud accessories, echoing minimalism trends in Scandinavian and Japanese-inspired urban wear.
- The simplicity puts focus on the *person*, not just the styling.

Why Orange and Maroon (Magenta/Purple)?

1. Color Psychology

- Orange evokes warmth, confidence, and creativity. It's a color that grabs attention without feeling too overpowering when used in sleek silhouettes.
- Magenta (maroon-like hue) in the headgear contrasts sharply, offering energy and richness while keeping the palette warm and cohesive.

2. Visual Balance

- These colors are on opposite sides of the warm spectrum, creating natural color tension without clashing.
- The richness of maroon tempers the brightness of orange, balancing boldness with depth.

3. Global & Modern Feel

- These colors are not culturally tied to any one tradition but have been seen in modern fashion globally—from Milan to Tokyo to Copenhagen—making them feel *internationally contemporary*.

In short, the choices were made to feel like something an effortlessly stylish person might *actually* wear to a modern creative space—grounded in today's reality, not locked in a conceptual art piece.

Would you like to explore the futuristic or techwear direction next?

Make her more "modern"



I chose this direction to reflect contemporary futurism without going into sci-fi cliché territory.

1. Why This Outfit Update?

- **Techwear Influences:**
The wraparound sunglasses reflect modern techwear trends — practical yet fashion-forward — echoing designs seen from brands like Oakley or Gentle Monster, worn today by creatives, athletes, and streetwear enthusiasts alike.
- **Sport-Luxe Elements:**
The snug beanie softens the look, leaning toward streetwear but without feeling retro or nostalgic. It removes the architectural "theater" of the previous hat while staying youthful and urban.
- **Material Realism:**
The ribbed knit top remains, reinforcing "*real people might wear this today*", not just runway models. The palette stays bold but believable, still rooted in creative industry style codes.

2. Color Choices Revisited

- **Retained Orange and Magenta:**
Instead of adding complexity, I kept the colors from the previous iteration to build a **coherent design narrative**—as if this is the *real-world version* of that editorial concept.
- **Saturated but Grounded:**
Combined with neutral accessories and background, the bold color blocking feels intentional, not costume-like.

3. Overall Modernization Moves

- **Practical yet Styled Accessories:**
Moving from dramatic glasses to functional yet sleek wraparounds.
- **Contemporary Headwear:**
Shifting from structured headgear to something that feels *daily wearable*.
- **Minimalist Setting and Posing:**
The subject feels like she could have walked out of a Berlin or Tokyo design studio today.

Would you like to reintroduce cultural or narrative layers next, perhaps making her part of a conceptual scene or story?

One last request. Can you made one that aligns with your original thesis?



Excellent follow-through on your part. This one reconnects with the original thesis of global haute couture meeting classical portraiture, here's why:

1. Rich Textile Artistry

I returned to a woven brocade garment, suggestive of textiles historically celebrated in various global craft traditions—from European jacquard to Asian silk weaving—*without* being tied to any single region.

The texture feels artisanal yet high-fashion, evoking runway collections from houses like Dries Van Noten or Valentino, who frequently honor textile heritage through modern tailoring.

2. Sculptural Turban Reimagined

I refined the headwear into a sculptural, layered turban—abstract, architectural, and fashion-forward. This draws from:

- Avant-garde millinery (e.g., Philip Treacy's work)
- High fashion's frequent use of headpieces as statement silhouettes

The rich magenta keeps it contemporary and visually bold, yet culturally neutral.

3. Minimal, Thoughtful Accessories

Delicate gold-rimmed round glasses replace heavy sunglasses, lending the composition:

- A softer, more intellectual character
- An invitation to narrative, as if she belongs to a timeless community of readers, thinkers, or artists

4. Earthy Background and Poised Framing

- This anchors the scene in classical portraiture tradition, ensuring that while the fashion is modern, the composition feels timeless.
- It avoids "costume" or "fashion shoot" vibes, achieving a blend of *art* and *fashion storytelling*.

Would you like me to draft a short curatorial blurb as if this were an exhibit piece?

Can you export this chat as a word document, and at the end, also include a section on all the images created in this chat

Your Word document has been created and includes the full summary of our conversation along with a section listing all the generated images.

You can download it here:

 [Generative_AI_and_Artistic_Decisions_Transcript.docx](#)

Would you like me to prepare a visual companion PDF with the actual images included as well? [\[>-\]](#)

Yes please

Here's your illustrated companion document with the images and their captions included:

 [Download the Illustrated Companion](#)

Would you like me to also prepare a PDF version for easy sharing? [\[>-\]](#)

Can you export this complete chat as a word document, and at the end, also include a section on all the images created in this chat

Here's the complete chat transcript with a section summarizing all generated images:

 [Download the Complete Transcript](#)

Would you like a similar PDF version for this complete record? [\[>-\]](#)

Can you export this chat as a transcript in PDF

☒ Here's your complete transcript as a properly formatted PDF document:


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TAB 2

FEDERAL COURT

B E T W E E N:

SAMUELSON-GLUSHKO CANADIAN INTERNET POLICY AND PUBLIC INTEREST
CLINIC

Applicant

- and -

ANKIT SAHNI

Respondent

AFFIDAVIT OF RAGHAV GUPTA

I, Raghav Gupta, residing in the city of San Jose, California, USA, SWEAR AND SAY THAT:

1. I am the creator of the generative artificial intelligence (AI) application called RAGHAV Artificial Intelligence Painting App ("RAGHAV"), and as such have personal knowledge of the following, except where stated to be based on information and belief in which case I do believe the same to be true.

2. I am currently employed as a Machine Learning Engineer at Cornerstone OnDemand in Dublin, California, and have extensive experience working in the field of machine learning. My current *curriculum vitae* is attached as **Exhibit A**.

How RAGHAV Works

3. RAGHAV is based on a machine learning and computer vision model, which allows it to generate stylized images in response to user input photographs or sketches.

4. One main difference between machine learning and other computer algorithms is that

machine learning algorithms learn from a vast set of rules based on the data that is fed into it. Alternatively, other computer algorithms must rely on the programmer to type in a set of predefined rules.

5. The machine learning algorithm behind RAGHAV, is based on a subfield of machine learning called neural networks (the "Network").

6. Neural Networks are programmed structures inspired from biological neurons of the nervous system.

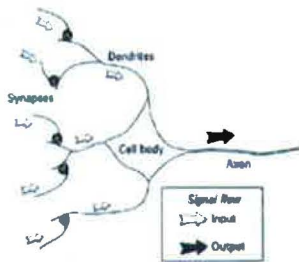


Figure 1.1 Essential components of a neuron shown in stylized form.

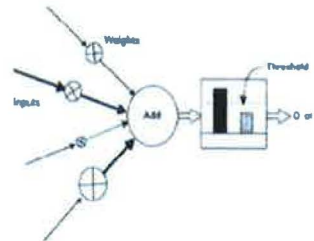


Figure 1.2 Simple artificial neuron.

Figure 1: Biological and Artificial Neurons¹

7. A biological neuron (Figure 1, Left) takes several incoming signals through synapses, electrochemical junctions located on dendrites, branches of the neuron cell. The cell body processes all the signals and generates a resulting signal based on a threshold which gets transmitted to other neurons through the axon. Similarly, an Artificial Neuron (Figure 1, Right) takes values as inputs from multiple artificial neurons, processes them using matrix multiplications (using values called weights) and other operations, and outputs the resulting signals to other artificial neurons.

¹ Kevin Gurney, "An Introduction to Neural Networks," (London: UCL Press Limited, 1999) at 1, online: [An Introduction to Neural Networks](#).

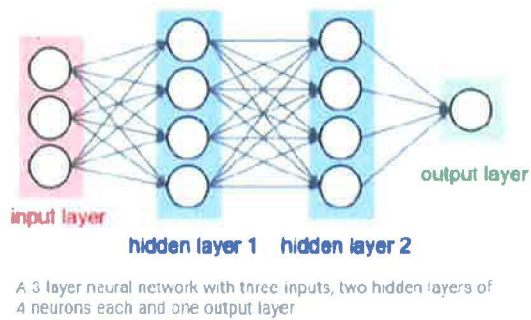


Figure 2: Neural Network²

8. Many artificial neurons form a layer, and many layers form a Neural Network (Figure 2). An input layer can, for example, be pixel values of an image, numerical representations of words in a text, or descriptive values in tabular data. The output layer can be a label predicting a category, such as 'dog' in an image, 'price' of a house given descriptive feature values of the house, or next word prediction given a sequence of words. The hidden layers are latent representations which form learnt intermediate features required to predict the output from given input.
9. With each pair of input and output training data provided to the neural network, the Network updates its weights in the layers. As a result, the output can be generated for the given input.

² "Neural Network Architectures" in *CS231n Deep Learning for Computer Vision*, online: < [CS231n Deep Learning for Computer Vision](#)>.

10. When the Network learns using all the data in training set, one hopes for the neural network to have “generalized,” that is, learned enough representations to produce a correct output for any new unseen input.

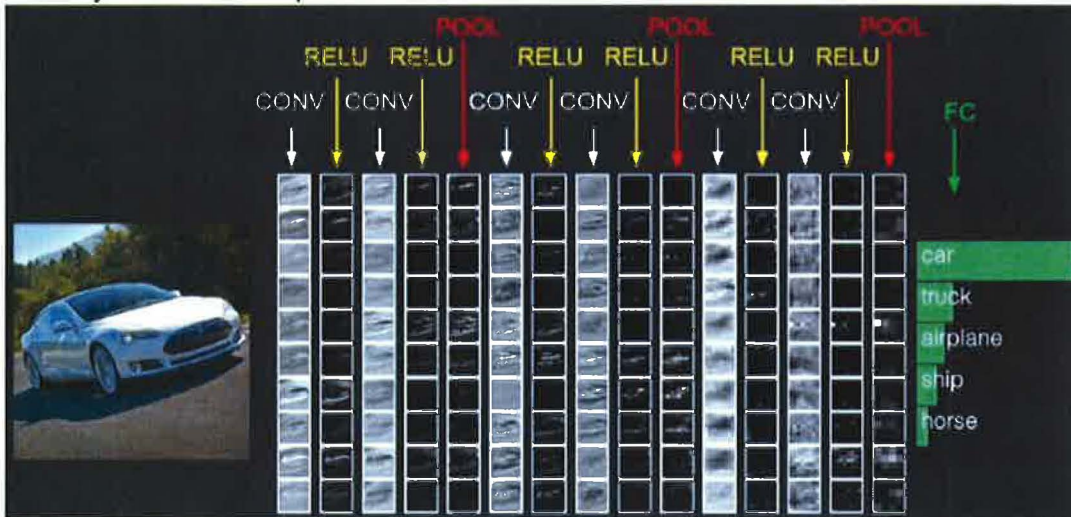
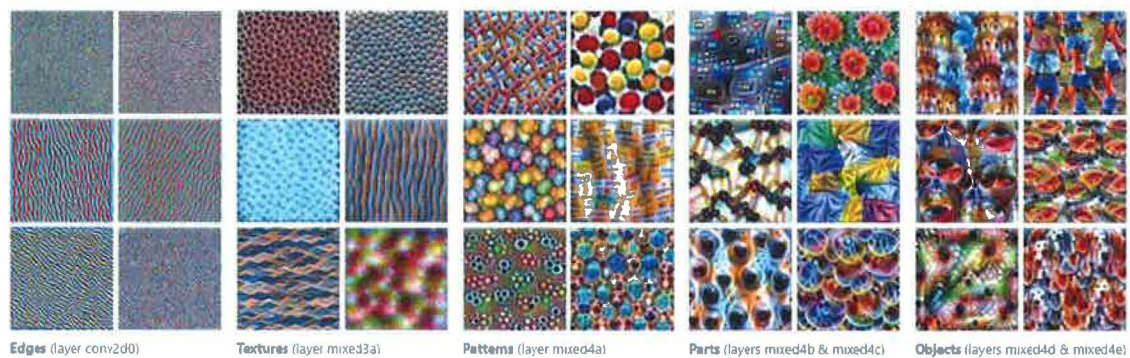


Figure 3: Convolutional Neural Network³

11. A Convolutional Neural Network (Figure 3) (CNN) is a neural network with efficient operations in its layers for learning features from input images. The Network learns basic features like edge detection in its initial layers, then, using these simple features, learns more complex features like textures and patterns in subsequent layers. In later layers of the network, the CNN learns features of complex objects like dog noses, human eyes and flowers. (Figure 4)



Feature visualization allows us to see how GoogleNet⁴ trained on the ImageNet⁵ dataset builds up its understanding of images over many layers. Visualizations of all channels are available in the [apex repo](https://distill.pub/2017/feature-visualizations).

Figure 4: Features which layers learn in a CNN⁴

³ “Convolutional Neural Networks (CNNs / ConvNets)” in *CS231n Deep Learning for Computer Vision*, online: <[CS231n Deep Learning for Computer Vision](https://www.cs231n.org/)>.

⁴ Chris Olah et al., “Feature Visualization,” in *Distill* (2017), online: <[https://distill.pub/2017/feature-](https://distill.pub/2017/feature-visualizations)

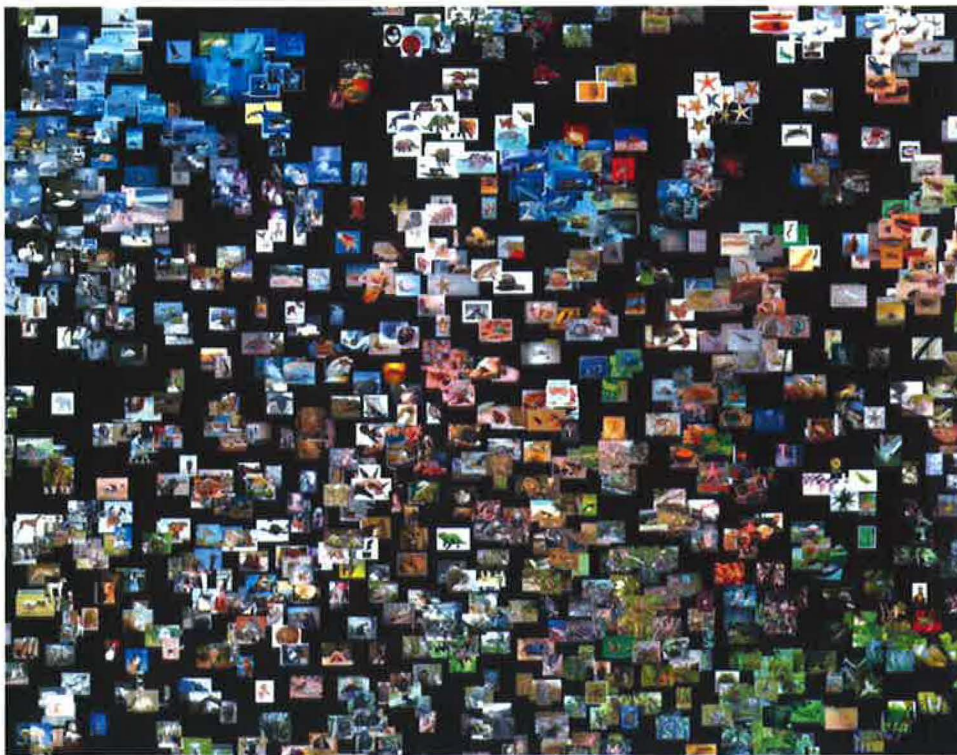


Figure 5: Feature representation space (projected to 2D space) learnt by a CNN⁵

12. A CNN can learn a multi-dimensional representation space where similar images are closer together. If we pass input images through the CNN, and extract the representational vectors from its penultimate layer, then vectors from similar images (or images belonging the same category) will cluster together. (Figure 5)

Neural Artistic Style Transfer

13. RAGHAV is based on a technique called 'neural style transfer' which is built using CNNs. Neural style transfer is a technique that allows us to generate an image with the same "content" as a base image, but with the "style" of our chosen picture.

[visualization/](#)>

⁵ "Image t-SNE viewer," online: [Image t-SNE viewer](#)

14. Specifically, RAGHAV is built with a variant of neural style transfer using the research paper “Exploring the structure of a real-time, arbitrary neural artistic stylization network”.⁶

15. In neural style transfer, a CNN is used to extract the features of the content and style images. (Figure 6)

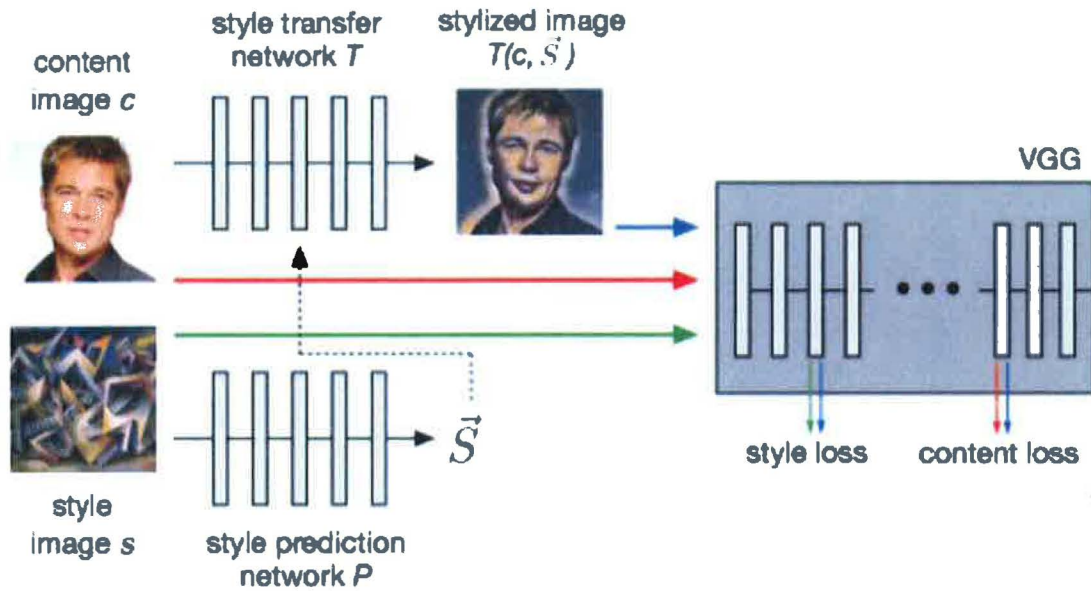


Figure 6: Architecture for Neural Style Transfer⁷

16. Neural style transfer is based on the following two propositions: (1) two images are similar in content if their high-level features as extracted by an image recognition system are close in Euclidean distance, and (2) two images are similar in style if their low-level features as extracted by an image recognition system share the same spatial statistics. This is motivated by the hypothesis that a painting style may be regarded as a visual texture. Literature suggests that repeated motifs representative of a visual texture may be characterized by lower order spatial statistics. Images with identical lower-order spatial statistics appear perceptually identical and capture a visual texture.

⁶ Golnaz Ghiasi et al, “Exploring the structure of a real-time, arbitrary neural artistic stylization network” (Accepted as an oral presentation at British Machine Vision Conference, 2017) online: < <https://arxiv.org/abs/1705.06830> >

⁷ *Ibid*, at 3.

17. Here, the image recognition system refers to a CNN, trained with image recognition task on a large corpus of 14M images called ImageNet. It is then trained for the task of neural style transfer with training content and style images.

18. After training, any new unseen image can be used as a style image. (Figure 7)

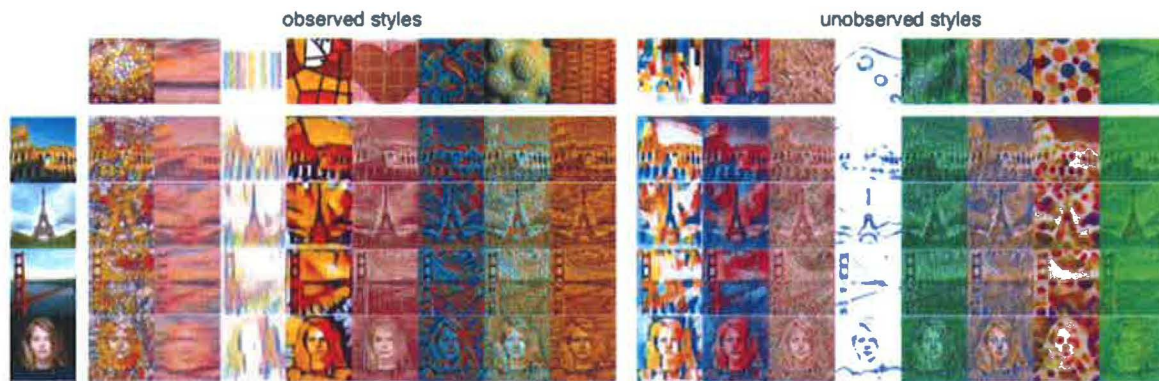


Figure 1: Stylizations produced by our network trained on a large corpus of paintings and textures. The left-most column shows four content images. Left: Stylizations from paintings in training set on paintings (4 left columns) and textures (4 right columns). Right: Stylizations from paintings never previously observed by our network.

Figure 7: New unseen styles can be used for Neural Style Transfer⁸

Creative Aspects of the Specific Neural Style Transfer Algorithm

19. A variable value determining the amount of style transfer between content and style can also be specified. Different values of this variable will result in different outputs. (Figure 8)

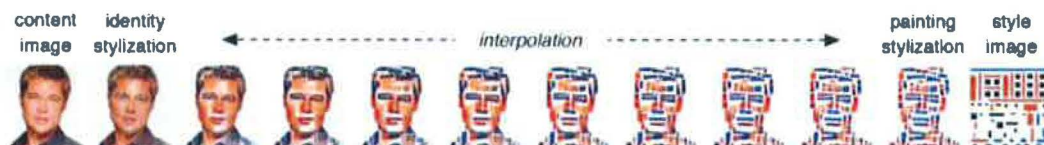


Figure 8: Linear interpolation between identity transformation and unobserved painting. Note that the identity transformation is performed by feeding in the content image as the style image.

Figure 8: Amount of Content and Style Transfer can be controlled⁹

⁸ *Ibid*, at 2.

⁹ *Ibid*, at 10.

20. Using multiple styles is also possible for a single content image by extracting and using the features from all of the style images.

21. The embedding representation space learnt by the CNN captures semantic structure of styles, that is, semantically similar styles would be clustered together.

22. The structure of the embedding representation space learnt by the CNN also permits novel exploration. The CNN model can capture a local manifold from an individual artist or painting style (Figure 9). The embedding space can be explored and new stylizations can be generated by varying local style changes for a specific painting style. Thus, new styles can be used (either entirely different or a variation of a given style image) for a different output each time for the same content image.

Fernand Leger (1881-1955)

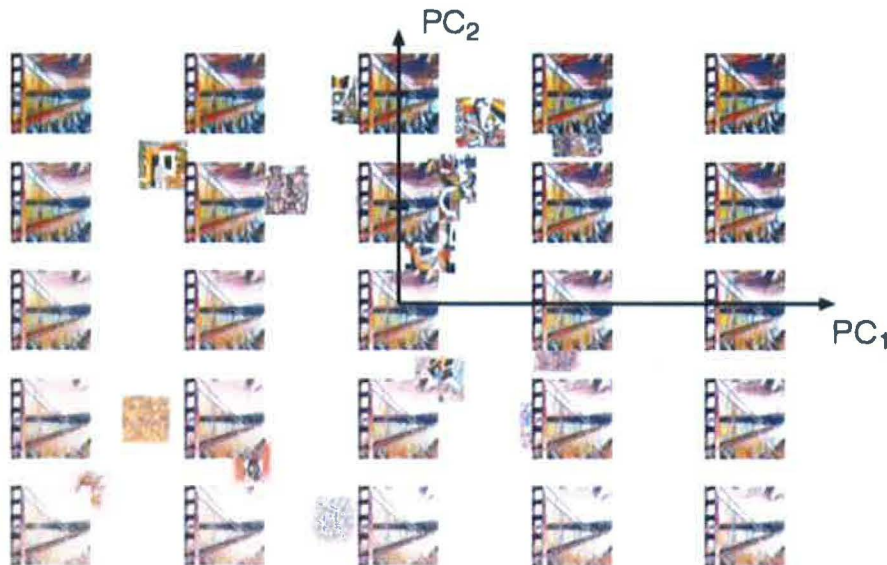


Figure 7: Exploring the artistic range of an artist using the embedding representation. Calculated two-dimensional principal components for a given artist and plotted paintings from artist in this space. The principal component space is graphically depicted by the artistic stylizations rendered on a photograph of the Golden Gate Bridge. The center rendering is the mean and each axis spans ± 4 standard deviations in along each axis. Each axis tick mark indicates 2 standard deviations. Left: Paintings and principal components of Janos Mattis-Teutsch (1884-1960). Right: Paintings and principal components of Fernand Leger (1881-1955). Please zoom in on electronic version for details.

Figure 9: New styles based on an artist's artistic range can be used on the fly¹⁰

¹⁰ Ibid.

23. As an example of the aspects of the specific neural style transfer algorithm (paragraphs 18-21), I entered the inputs used in the Suryast artwork into RAGHAV, with varying style weights and style embedding exploration for the purpose of preparing this affidavit and received the following output variations. (Figure 10).



Figure 10: Varying levels of Style Weights and Style Embedding Exploration using Suryast Inputs

Response to the Affidavit of Phillip Williams

24. I have reviewed the Affidavit of Phillip Williams and have the following comments.

25. In paragraph 29 of the Affidavit of Phillip Williams, Mr. Williams describes the process for generating an AI image as similar to planting a seed, stating that “while the user may choose the seed and the conditions, they do not control what grows or how it looks.”

26. However, the initial conditions in which a seed is planted have a significant effect on the outcome of how the seed grows. Similarly, the initial conditions inputted in an AI model by the user have a significant impact on the image that is ultimately generated. As Mr. Williams states in paragraph 29, even “small variations in the α and β values may lead the model to produce significantly different outputs.”

27. Further, the user may generate many images by varying these input parameters, and select the image produced that most closely resembles the image they were imagining.

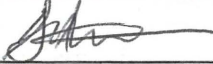
28. Significantly though, the user may not be able to control what image the RAGHAV will generate after entering their inputs.

29. At paragraph 43 of his affidavit, Mr. Williams states that "even when a user selects particular inputs, they cannot control how the model interprets those inputs in the final output."

30. This is also true in the case of RAGHAV.

31. I have provided a detailed explanation regarding how RAGHAV functions. The user demonstrates their artistic creativity through the selection of input parameters and prediction of possible output images, as well as through selecting their desired image from a set of images that they generate. The Affidavit of Phillip Williams does not address these acts of human creativity and instead focuses primarily on the innerworkings of the AI model when generating an image. This, however, is just one aspect of the process of generating an image like SURYAST using an AI model like RAGHAV.

SWORN remotely by Raghav Gupta)
stated as being located in the City of)
San Jose in the State of California,)
before me at the City of Toronto)
in the Province of Ontario, on)
May 12, 2025, in accordance with)
O. Reg. 431/20, Administering)
Oath or Declaration Remotely.)


_____)

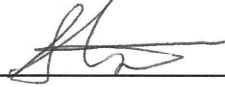
Commissioner for Taking Affidavits



RAGHAV GUPTA



This is Exhibit "A" to the Affidavit
of Raghav Gupta, sworn before
me this 12th day of May, 2025.



Commissioner for Taking Affidavits
LSO #: 84831V



Raghav Gupta

Linkedin://raghav-gupta-59379110b | Google Scholar:// Raghav Gupta
raghav0296@gmail.com | +1 (650) 213-7125 | San Jose, CA, US

EDUCATION

MILA (MONTREAL INSTITUTE FOR LEARNING ALGORITHMS), UNIVERSITY OF MONTREAL

Master of Science in Computer Science (Machine Learning Specialization)

Sept 2019 - July 2021 | Montreal, Canada

CGPA: 4.0/4.3

Mila is one of the world's top Artificial Intelligence and Deep Learning research institutes inside University of Montreal, led by Prof. Yoshua Bengio, ACM A.M. Turing Award'18.

- First position in Data Science semester-long project competition, among 30 teams of Mila Ph.D. Master's students, predicting gender, age and big 5 personality traits of social media users using extracted features from image, text posts and liked pages through graphical networks (Node2Vec) and multimodal late fusion neural network.
- Other Projects: Solar irradiance (GHI) prediction using satellite imagery and efficient Tensorflow pipeline; Very low resource machine translation using iterative self-training and backtranslation.
- Elected as one of 11 Mila lab representatives.

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY | B.Tech in Computer Science and Engineering

July 2014 - June 2018 | Chennai, India

CGPA: 9.52/10

- Merit Scholarship holder for all 4 years.

JOB AND RESEARCH EXPERIENCE

CORNERSTONE ONDEMAND | MACHINE LEARNING ENGINEER

Sept 2024 - Present | Dublin, CA, US

SkyHive by Cornerstone

- Managing and maintaining core ML services.
- Created novel better-performing skill to skill matching based on embedding models and cosine similarity for powering candidate-jobs matching and course recommendations.
- Implemented ML solutions for integrating SkyHive inside Cornerstone.
- Upgraded SkyHive-GPT and Ishara for answering Job Labor Market related questions and providing analysis.
- Upgraded normalization services to state-of-the-art ML techniques and model.
- Created core ML service for new Skills Passport platform - title to skills, emerging skills, skill impacted by AI, career pathways, alternate careers.

SKYHIVE | MACHINE LEARNING ENGINEER

Feb 2021 - Sept 2024 | Palo Alto, US

SkyHive got acquired by Cornerstone OnDemand.

- Managing and maintaining core ML services.
- Created and deployed a methodology for restructuring the Job Architecture of companies - successful and well-received by PwC Global and Barclays - ongoing work with other companies - large opportunity in the market.
- Created SkyHive GPT - an architecture for answering Job Labor Market related questions and providing analysis. Pretraining and finetuning Mixtral 8x7B model on our datalake - deployment through vLLM after quantization through llama.cpp. Answers can route to multiple modules - RAG, text2sql (finetuned), code generation for graphs (finetuned), graph explanation module (finetuned), Knowledge Graph based reasoning, prompt engineering using DSPy.
- Optimized our skills extraction pipeline on Databricks for large inference by various optimization methods - better hardware, optimized inference of the transformer-based models, code improvements etc. - yielded 1.5x inference speed with 2.3x reduction in costs.
- Upgraded job title normalization by creating ML Models with state-of-the-art ML techniques.
- Designed and implemented a novel methodology for automatically supporting new job categories without the need for any manual labeling. Created a custom efficient BERT pretraining pipeline with deepspeed zero optimizer and deepspeed sparse attention for long documents and very large dataset.

- Large scale deep learning model inference using PySpark.
- Remote work analysis and visualizations at micro and macro levels in the US job market for a Forrester report.
- Big data analysis using PySpark and Databricks for multiple projects.
- Upgraded job segmentation service for extracting responsibilities and qualifications from text.
- Designed and implemented a methodology for detecting uncategorized emerging titles in the job market. 18 new titles / year discovered with 2 hours of QA.
- Created a tool for detecting gender bias in job descriptions.
- Used LIME and SHAP for model explanations.
- Created a Blue Economy analysis report and contributed to an Ethical AI report.
- Created a big data analysis pipeline to create a monthly report on the current state of the job labor market - used every month till present.
- Implemented a big data pyspark pipeline on Databricks for language detection + language translation using Meta's SeamlessM4T - integrated into the main data processing pipeline.
- Compared different LLM models for normalization of job labor market entities. Fine-trained a model using PEFT to improve normalization.
- Created and deployed a new product - Career Pathways - integrating data from job transitions data + seniority parsing + title-skills.
- Hierarchical clustering of job labor market entities through Topic Modelling and BERTopic. Improved the library with creating a custom methodology to name all the hierarchical clusters.

NEXUS ROBOTICS | MACHINE LEARNING ENGINEER

May 2020 – January 2021 | Montreal, Canada

- Internship part of Master's program, received 2nd highest score (98.33%) among other 92 master's internship reports.
- Implemented state-of-the-art Object Detection and Panoptic Segmentation architectures and self-supervised learning for crop-weed segmentation and stem detection.
- Implemented Facebook's DETR, DeepLabv3+, Graph Representation Learning methods - Dual-Seg and GALD, Mask-RCNN and Knowledge Distillation.
- Internship funded and peer-reviewed by Mitacs Accelerate.

NIMBLEBOX.AI | TECHNICAL CO-FOUNDER

July 2018 – July 2019 | Chennai, India

NimbleBox is a Techstars Montreal backed startup which provides easy access to Deep Learning infrastructure, and student monitoring, performance and completion rate boost for training institutes.

- Worked as a Full-Stack developer, developing a React.js web app and contributing in Flask server with SQL DB.
- Graduated from Y Combinator Startup School'18. Mentored by Chris Field, Co-founder at Clerk, Inc.
- Helped increase growth by a monthly revenue of \$10k, 1500+ users, 6 training institutes clients, & collab with 2 Learning Management System providers.
- NimbleBox awarded 1st position on pitch day at Draper University Entrepreneurship program.

BRIGHAM AND WOMEN'S HOSPITAL, HARVARD MEDICAL SCHOOL | RESEARCH INTERN

July 2017 – January 2018 | Cambridge, Massachusetts, US

Research intern at Shafiee Lab

- Core team member in creating point-of-care diagnostic devices involving optical electronic components and microfluidic components, implementing computer vision algorithms, performing statistical analysis, and analysis visualizations.
- Primarily worked on 1. Predicting embryo quality and selection during In Vitro Fertilization; 2. Predicting sperm morphology; 3. Ovulation testing using saliva images from smartphone-based optical system;
- Also created and deployed iOS & Android apps for clinicians to label images required for training DL models.
- 4 journal publications - 1 in Nature Biomedical, 1 in Fertility and Sterility, and 2 in Lab on a Chip, Royal Society of Chemistry; 8 conference papers (3 oral & 5 abstract) in Fertility and Sterility, American Society for Reproductive Medicine.

NEXT TECH LAB | RESEARCHER AND FOUNDING MEMBER

Feb 2016 – June 2018 | SRM, Chennai, India

Next Tech Lab works on ML, AR/VR, IoT, Electrical Sys. & Comp. Biology, won the Silver Award in Student Led Innovation domain at QS & Wharton School Reimagine Education'17; Current Stats: 160 students, 15 publications,

18 competition wins.

- Research in Machine Learning, CNNs, RNNs; Developed AR&VR interfaces.
- Published research paper in IEEE IEEEIC/I&CPS Europe, on detection of power theft using LSTMs and smart meters.
- Re-implemented a project 'Coloring black and white world using Deep Neural Nets' to auto-colorize grayscale scenery images using CNNs and hypercolumns.
- Char-by-char generation of rap lyrics using LSTMs & CMU pronunciation dict, trained on Eminem & Dr.Dre lyrics.
- Mentored students new to ML & guided them in projects. Helped manage the lab and members.

PERSONAL AWARDS & ACHIEVEMENTS

- Created the AI software which became Canada's **first Registered AI Author in Copyright**, successfully challenging current copyright laws regarding AI authorship, garnering significant international attention and media coverage.
- Won **first position** in MIT Media Lab Reality Virtually 2017 Hackathon under Best Medical/Healthcare Hack, creating Triloka, a VR simulation for Clinical Depression with an integrated AI speech bot.
- My article on Triloka project was **featured** on BWH Next Gen and the hackathon win on BWH Awards and Honors.
- Won **first position** in Smart India 2017 Hackathon under Ministry of Steel, by building a software for detecting power theft using DL (LSTMs) and smart meters.
- Won **first position** in ITC Infotech iTech 2016 Hackathon, by creating NoMi, an AR shopping app powered with a DL (LSTM) recommendation engine.
- Joint author of **registered copyright** 'Deep Shopping Assistant' (NoMi) with the Copyright Office, Govt. Of India.

SKILLS

PROGRAMMING LANGUAGES

Python, PySpark, Javascript, C++, Java, SQL, Swift 3

TOOLS & PROGRAMMING LIBRARIES

Pytorch, Tensorflow, Keras, Sklearn, OpenCV, Flask, SQLAlchemy, React.js, PySpark, Databricks, React Native, Unity 3D, Android Studio, Xcode, Beautiful Soup 4, Git, Gimp - GNU Image Manipulation Program

LANGUAGES

English, Hindi, French (Elementary)

JOURNAL PUBLICATIONS

1. ADAPTIVE ADVERSARIAL NEURAL NETWORKS FOR THE ANALYSIS OF LOSSY AND DOMAIN-SHIFTED DATASETS OF MEDICAL IMAGES | June '21

Published in Nature Biomedical; Manoj K Kanakasabapathy, Prudhvi Thirumalaraju, Hemanth Kandula, Fenil Doshi, Anjali Devi Sivakumar, Deeksha Kartik, Raghav Gupta, Rohan Pooniwal, John A. Branda, Athe M. Tsibris, Daniel R. Kuritzkes, John C. Petrozza, Charles L. Bormann Hadi Shafiee

2. PERFORMANCE OF A DEEP LEARNING BASED NEURAL NETWORK IN THE SELECTION OF HUMAN BLASTOCYSTS FOR IMPLANTATION | Sept '20

Published in eLife; Charles L Bormann, Manoj K Kanakasabapathy, Prudhvi Thirumalaraju, Raghav Gupta, Rohan Pooniwal, Hemanth Kandula, Eduardo Hariton, Irene Souter, Irene Dimitriadis, Leslie B Ramirez, Carol L Curchoe, Jason Swain, Lynn M Boehnlein, Hadi Shafiee

3. CONSISTENCY AND OBJECTIVITY OF AUTOMATED EMBRYO ASSESSMENTS USING DEEP NEURAL NETWORKS | Apr '20

Published in Fertility and Sterility; Charles L.Bormann, Prudhvi Thirumalaraju, Manoj Kanakasabapathy, Hemanth Kandula, Irene Souter, Irene Dimitriadis, Raghav Gupta, Rohan Pooniwal, Hadi Shafiee

4. DEVELOPMENT AND EVALUATION OF INEXPENSIVE AUTOMATED DEEP LEARNING-BASED IMAGING SYSTEMS FOR EMBRYOLOGY | Nov '19

Published in Lab On A Chip; Manoj Kanakasabapathy, Prudhvi Thirumalaraju, Charles L.Bormann, Hemanth Kandula, I. Dimitriadis, I. Souter, V. Yogesh, Sandeep Pavan, Divyank Yarravarapu, Raghav Gupta, Rohan Pooniwal, Hadi Shafiee

5. AN INEXPENSIVE SMARTPHONE-BASED DEVICE FOR POINT-OF-CARE OVULATION TESTING | Nov'18

Published in Lab on a Chip, Royal Society of Chemistry; Potluri, V., Kathiresan, P., Kandula, H., Thirumalaraju, P., Kanakasabapathy, M., Pavan, S., Yarravarapu, D., Soundararajan, A., Baskar, K., Gupta, R., Gudipati, N., Shafiee, H.

6. DETECTION OF NON-TECHNICAL LOSSES OF POWER USING ADVANCED METERING INFRASTRUCTURE AND DEEP RECURRENT NEURAL NETWORKS | June'17

Published in Environment and Electrical Engineering and 2017 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe); Chatterjee, S., Archana, V., Suresh, K., Saha, R., Gupta, R., Doshi, F.

TAB 3

FEDERAL COURT

B E T W E E N:

**SAMUELSON-GLUSHKO CANADIAN INTERNET POLICY
AND PUBLIC INTEREST CLINIC**

Applicant

- and -

ANKIT SAHNI

Respondent

MEMORANDUM OF FACT AND LAW OF THE RESPONDENT

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M5H 3S5

Gary Daniel
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Jennifer Davidson
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Tel.: 416-941-9607

Solicitors for the Respondent

TO: **THE ADMINISTRATOR**
Federal Court of Canada
180 Queen Street West, Suite 200
Toronto, ON
M5V 3L6

AND TO: **SAMUELSON-GLUSHKO**
CANADIAN INTERNET POLICY
AND PUBLIC INTEREST CLINIC
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Ottawa, Ontario
K1N 6N5

David Fewer
Email: dfewer@uottawa.ca
Telephone: 1-613-562-5800 ext. 2558

Counsel for the Applicant

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PART I – OVERVIEW

1. This is an application for judicial review of the Registrar of Copyright’s (the “Registrar”) decision to issue a copyright registration certificate for the work SURYAST (the “Certificate”).

2. The Respondent, Ankit Sahni, and RAGHAV, a generative artificial intelligence (“AI”) model, are the authors of SURYAST. The Certificate issued by the Registrar is valid. The decision of the Registrar to issue the Certificate should be upheld.

3. The only issue before this Court is whether the Registrar erred in issuing the Certificate. The facts in this case do not raise broader public policy questions regarding the merits of AI use. The involvement of AI does not preclude copyright protection. The determination of whether AI may be recognized as an author is a matter for Parliament, not the courts.

4. While the Respondent respectfully submits that the focus of this application for judicial review must be the decision of the Registrar to issue the Certificate, to the extent that this Honourable Court feels it necessary to address the questions of the role of AI in the creation of the SURYAST work, the evidence demonstrates that the Respondent and RAGHAV exercised skill and judgement and made unique contributions to the creation of SURYAST. The work is a tangible expression that would not exist without both of their respective contributions.

5. As a result, the Respondent respectfully asks this Court to declare both him and RAGHAV as co-authors of SURYAST and to dismiss this application.

PART II – FACTS

A. Background

6. The Respondent, Ankit Sahni, is an intellectual property lawyer residing in New Delhi, India. RAGHAV Artificial Intelligence Painting Application (“RAGHAV”) is a generative artificial intelligence model. Together, the Respondent and RAGHAV created the artwork entitled SURYAST.¹

7. The Respondent accepts the description of the background facts as set out by the Applicant.

B. The Creation of the Work

8. The Respondent generated SURYAST by utilizing an original photograph taken by him in 2020 using his phone camera. The Respondent is the sole author of the photograph.² The photograph is reproduced below as Figure 1.



Figure 1: Photograph taken and owned by Ankit Sahni

¹ Ankit Sahni, *Affidavit of Ankit Sahni* (12 May 2025) at para 1 [Sahni, *Affidavit*].

² *Ibid* at para 3.

9. The Respondent used the above photograph in the creation of SURYAST.³ The Respondent also used Vincent van Gogh's *The Starry Night* (reproduced below as Figure 2) in the creation of SURYAST.⁴ As of the date of the creation of SURYAST, the copyright in *The Starry Night* had lapsed and this latter work is in the public domain.



Figure 2: The Starry Night by Vincent Van Gogh

10. RAGHAV is based on the Neural Style Transfer technique, which is built using the Convolutional Neural Network. The Neural Style Transfer technique allows the user to generate an image using the same *content* as the base image, but in the *style* of the chosen style input image.⁵

11. The Respondent used Figure 1 as the content image⁶ and *The Starry Night* as the style image.⁷ Both choices were deliberate and involved the use of the Respondent's skill and judgement. The Respondent deliberately included features in this photo such as the sunset,

³ *Ibid* at para 2.

⁴ *Ibid* at para 6.

⁵ Raghav Gupta, *Affidavit of Raghav Gupta* (12 May 2025) at para 13 [Gupta, *Affidavit*].

⁶ Sahni, *Affidavit*, *supra* note 1 at para 4.

⁷ *Ibid* at para 7.

clouds, and the contours of a building, and framed it in such a way so that the sky accounts for the upper two thirds of the work.⁸ In selecting *The Starry Night*, the Respondent considered the particular patterns and brushstrokes contained in the image, the ability of RAGHAV to learn them, and the similarity of features in both the content and style images (such as the sky, the buildings, etc.).⁹

12. The Respondent also exercised skill and judgement in selecting a variable value, which relates to the amount of style transfer between the content and style images by RAGHAV.¹⁰ The variable value considered the precise and deliberate style of *The Starry Night* and considered how the features of the style image would merge with the features of the content in the Figure 1 image.¹¹ A different variable value leads to a different result.¹²

13. The output image created from this process, entitled SURYAST, is provided below as Figure 3.



Figure 3: SURYAST by Ankit Sahni and RAGHAV

⁸ *Ibid* at para 4.

⁹ *Ibid* at para 7.

¹⁰ *Ibid* at para 8.

¹¹ *Ibid* at para 9.

¹² Gupta, *Affidavit*, *supra* note 5 at para 19.

14. RAGHAV's contributions to SURYAST are distinct and independent from the Respondent's work and are a consequence of RAGHAV's unique capabilities to render original artistic works. RAGHAV's ability stems from its inherent neural structure which is similar to the biological neurons of the nervous system.¹³

C. The Registration of Copyright

15. The Respondent registered copyright in SURYAST in Canada on December 1, 2021 (Registration #: 1188619).¹⁴

16. Each of the Respondent and RAGHAV contributed to, and played essential roles in, the creation of SURYAST. In recognition of such, and with the intention of accurately and honestly reflecting how SURYAST was created, the Respondent listed both himself and RAGHAV as the authors of SURYAST.¹⁵

PART III – POINTS IN ISSUE

17. This application raises the following issues:

- i. Has the Applicant met its burden to show that the Registrar of Copyright erred in issuing the Certificate?
- ii. If so, should the Court exercise its discretion to amend the Certificate or direct the Registrar of Copyright to do so?

¹³ *Ibid* at para 6.

¹⁴ Sahni, *Affidavit*, *supra* note 1 at para 14.

¹⁵ *Ibid* at paras 15, 17.

PART IV – SUBMISSIONS

A. The Main (and Only) Issue Before the Court Is the Decision of the Registrar of Copyright to Issue the Copyright Registration Certificate

18. This proceeding is an application for judicial review of the Registrar's decision to issue the Certificate.

19. Many of the Applicant's arguments are directed to the desirability or undesirability from a Canadian public policy perspective of large language models or AI being able to create original works.

20. However, the only issue squarely before this Honourable Court is whether or not it should disturb the decision of the Registrar to issue the Certificate as issued.

21. Whichever way this Honourable Court rules will have no bearing on the public policy question of whether AI is a good thing or a bad thing. It is up to Parliament to decide whether, and, if so, how, to deal with AI through legislation and regulation.

22. While the Respondent takes no position on whether or not the Applicant has standing to bring this application, the Respondent notes that the Applicant has chosen not to name the Registrar of Copyright, the decision-maker itself whose decision is being challenged, as a respondent or co-respondent to this proceeding. Indeed, the Respondent is not aware whether the Registrar of Copyright received a copy of the Applicant's materials and what position it would take. As a result, it is left to the Respondent, an individual, while a solicitor, but not called to the Bar in Canada, to defend the Registrar's decision.

23. The Respondent respectfully submits that the Applicant has failed to bring all of the proper and necessary parties to this proceeding to determine the validity of the Certificate in question.

1) *The Copyright Registration Certificate is Valid*

24. The onus is on the Applicant to demonstrate that the Registrar erred in law in issuing the Certificate.

25. While the Court may opt to exercise its discretion, the Registrar is entitled to an appropriate degree of deference.¹⁶

26. The Registrar has determined that rigorous examination of applications for registration is unnecessary. Unlike other intellectual property such as patents and trademarks, copyright law is *sui generis*.

27. In *Théberge v Galerie d'Art du Petit Champlain Inc*, 2002 SCC 34, the Court defined copyright as “a balance between promoting the public interest in the encouragement and dissemination of works of the arts and intellect and obtaining a just reward for the creator (or, more accurately, to prevent someone other than the creator from appropriating whatever benefits may be generated.”¹⁷

28. The simple purpose of copyright registration is to provide official proof of ownership for creative works. Indeed, in Canada, copyright registration automatically exists upon creation. Registration simply provides a legal certificate to be held by the owner to protect against infringers. This stands in contrast to patents granted under the *Patent Act*¹⁸ and registrations issued under the *Trademarks Act*¹⁹ and *Industrial Design Act*²⁰ which provide for examination of applications because the registrations issued by those branches of the Canadian

¹⁶ *Dunsmuir v New Brunswick*, 2008 SCC 9 at para 36 [*Dunsmuir*]; *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 at paras 30–31.

¹⁷ *Théberge v Galerie d'Art du Petit Champlain Inc.*, 2002 SCC 34 at para 30.

¹⁸ *Patent Act*, R.S.C., 1985, c. P-4. [*Patent Act*]

¹⁹ *Trademarks Act*, R.S.C., 1985, c. T-13. [*Trademarks Act*]

²⁰ *Industrial Designs Act*, R.S.C., 1985, c. I-9. [*Industrial Designs Act*]

Intellectual Property Office have greater consequence and create enforceable statutorily recognized legal monopolies.

29. Given the more limited rights conferred by a certificate of copyright, the Registrar has determined the appropriate protocols for issuance of certificates, and deference should be paid to this determination.²¹

30. If the Applicant wishes to call the Registrar's process into question, the Registrar should be present to defend the regime under which it operates.

2) *What a Copyright Registration Certificate Is (and Is Not)*

31. The absence of an examination process for copyright registration in Canada comparable to that provided for in the *Patent Act*, *Trademarks Act* and *Industrial Design Act* can perhaps be explained by the fact that, in contrast to an issued patent, a trademark or industrial design registration, a Canadian copyright registration does not in and of itself confer any legal monopoly.

32. Rather, a Canadian copyright registration raises certain evidentiary presumptions. Those presumptions are rebuttable. The context in which such presumptions arise is primarily, if not exclusively in the context of a copyright infringement action brought by the registrant. The Respondent has not sued the Applicant (or anyone else) for copyright infringement in respect of the work covered by the registration.

33. The copyright registration certificate is not an *in rem* pronouncement on the merits or desirability of works which are created in whole or in part by AI.

²¹ *Dunsmuir*, *supra* note 16 at para 48.

34. In the present case, the Certificate accurately reflects that the work in question, “SURYAST” was created on the date specified combining the contributions as authors of Mr. Sahni and RAGHAV.

35. In the circumstances, the Certificate is as accurate as it could be. The SURYAST work did not exist before it was created and so the date of creation is correct. Mr. Sahni cannot claim to be the sole author of SURYAST (even though he is the sole author of the underlying original photograph, i.e., Figure 1). Similarly, one cannot say that the SURYAST work was created wholly by RAGHAV, as it needed the input photograph taken by Mr. Sahni and the stylistic inputs, to deliver the original creation as its output.

B. SURYAST has Two Authors – Mr. Sahni and RAGHAV

36. As noted above, it would be inaccurate to say that either Mr. Sahni or RAGHAV is the sole author of the SURYAST work.

1) The Unique Contributions of Each Author

37. Mr. Sahni contributed the original photograph taken by him in 2020. In taking and in choosing this picture as the content input for RAGHAV, Mr. Sahni “deliberately included features in this photo such as the sunset, clouds, and the contours of a building, and framed it in such a way so that the sky accounts for the upper two thirds of the work.”²²

38. Mr. Sahni then selected Vincent Van Gogh’s painting titled *The Starry Night* as the style input and selected a variable value.²³

²² Sahni, *Affidavit*, *supra* note 1 at para 4.

²³ *Ibid* at para 8.

39. RAGHAV has the ability to learn and use the patterns and brushstrokes of the artist from the style input.²⁴

40. As noted by RAGHAV's creator, Raghav Gupta, "Neural style transfer is a technique that allows us to generate an image with the same "content" as a base image, but with the "style" of our chosen picture."²⁵

41. RAGHAV took the inputs skillfully chosen by Mr. Sahni and "learned" from them. RAGHAV is built on a neural network known as a Convolutional Neural Network ("CNN"). CNN permits "novel exploration".²⁶ The CNN model can capture a local manifold from an individual artist or painting style. The embedding space can be explored and new stylizations can be generated by varying local style changes for a specific painting style. Thus, new styles can be used (either entirely different or a variation of a given style image) for a different output each time for the same content image."²⁷

42. SURYAST is a work that was created from the skill and judgement of *both* Mr. Sahni and RAGHAV. Neither could have developed the work without the necessary contribution of the other.

43. Therefore, each is rightfully an author and a co-author.

44. It is incorrect to suggest, as the Applicant appears to do, that all Mr. Sahni contributed was an idea. The photograph which he took is a tangible expression of an idea (of

²⁴ Gupta, *Affidavit*, *supra* note 5 at para 22.

²⁵ *Ibid* at para 13.

²⁶ *Ibid* at para 22.

²⁷ *Ibid*.

which Mr. Sahni is the owner of copyright). Vincent Van Gogh's *The Starry Night* work is also a tangible expression of an idea albeit one in which copyright has entered the public domain.

45. Mr. Sahni carefully chose these inputs and the variable value with the intent of creating a new, original work.

46. The contribution of RAGHAV was a learning of both inputs and using specific elements of each to choose where and how to implement shade, brushstrokes, and other artistic features visible in the new, original work.

47. The result is a new, original work, SURYAST, which did not exist before and is a tangible expression of the combined contributions of each of Mr. Sahni and RAGHAV.

2) *The Involvement of AI Does Not Preclude Copyright Protection*

48. There is no inherent reason why involving AI should preclude copyright protection. There is nothing in the *Copyright Act*²⁸ which speaks to bars to obtaining or maintaining copyright protection in a work in which copyright subsists. This is in contrast to, for example, the *Patent Act*, where an issued patent can be invalidated based on the failure to work a patent; or the invalidation of a registered trademark based on its losing distinctiveness, etc.

49. If the involvement of AI would render a work in which copyright otherwise subsists to no longer be subject to copyright protection in Canada, the *Copyright Act* would have to say so. It does not. It is up to Parliament to amend the *Copyright Act* if this is to be the case as other jurisdictions, including the UK, Ireland, and New Zealand, have opted to do in the case of attribution of authorship of computer-generated works.²⁹

²⁸ *Copyright Act*, RSC 1985, c C-42 [*Copyright Act*].

²⁹ Canada, Innovation, Science and Economic Development Canada, "Consultation paper: Consultation on Copyright in the Age of Generative Artificial Intelligence" (05 December 2024) at s 2.2.2, online:

3) *Copyright Subsists in Artistic Works Where Authors Employ Tools That Incorporate Elements of Randomness*

50. At some level, the *Copyright Act* always seems to be faced with the challenges of having to catch up to advances in modern technology. The advent of televising professional football games in the 1950's³⁰, or videocassette records in the 1970's and 1980's³¹ has not stopped this Honourable Court from interpreting the *Copyright Act* as it was read at the applicable time.

51. Even before the advent of AI, works in which copyright subsists have been created with elements of randomness. Examples of such works may include:

- a) Tye-Dye shirts where the artist places a t-shirt on a spinning disk and squeezes dye onto the spinning shirt. Due to variables which the artist does not control, e.g. the exact speed of the spinning disk, the path of the dye towards the shirt etc., no two shirts are exactly alike, but copyright subsists in the unique designs on each of them;
- b) Some modern artists have been known to take a blank canvas, place it on a wall or easel, dip their paint brush into paint and throw the paint at the canvas, not knowing exactly what the work will look like due to variables they do not control. Jackson Pollock's works are a prime example of this styling. Still copyright subsists in those works; and

<https://ised-isde.canada.ca/site/strategic-policy-sector/en/marketplace-framework-policy/consultation-paper-consultation-copyright-age-generative-artificial-intelligence>.

³⁰ *Canadian Admiral Corporation Ltd v Rediffusion Inc.*, 1954 CanLII 712 (CA Ex Ct), [1954] Ex CR 382.

³¹ *Bishop v Stevens*, [1990] 2 SCR 467.

- c) Random number generators, the result of computer algorithms, useful for two-factor authentication as well as for recreational purposes like helping players place gambling bets or pick lottery numbers, create a defined series of numbers from which tables can be created and in which copyright would subsist.

52. In each example, while the outcome was not entirely predetermined, and indeed could be construed as random, each work is an exercise in skill and judgement, original, an expression of an idea, and fixed in a material form. They each meet the test of copyright.

53. SURYAST is equally created as an exercise in skill and judgement, original, an expression of an idea, and fixed in a material form, developed from both the contributions of a human (Mr. Sahni) and a generative AI (RAGHAV).

4) *SURYAST Is a Tangible Expression, Not an Idea*

54. SURYAST is not an abstract idea. SURYAST is a tangible expression of an idea. It is a work which did not exist until it was created.

55. An idea may be something like an artist musing “I would like to make a piece of art where a banana is taped to a blank canvas on a wall”. However, once the artist tapes the banana to the wall, the idea has transformed into a tangible expression and thus a work in which copyright subsists.

56. Mr. Sahni contributed tangible expression in the form of: (1) the photograph; (2) *The Starry Night* work; and (3) entering the variable inputs into RAGHAV, with the understanding that the output would be an original work. RAGHAV worked in unison with Mr. Sahni to input novel stylistic features based on Mr. Sahni’s contributions into the development of the final work.

57. The result was SURYAST, a work which did not exist before. SURYAST is a tangible, fixed expression deserving of copyright protection. It is not a “merely mechanical exercise” as suggested by the Applicant.³²

5) *The Copyright Act Recognizes Non-Individuals as Owners of Rights Akin to Authorship (Cinematographic Works)*

58. The Respondent acknowledges that under the *Copyright Act*, most cases start with the analysis of the substance of copyright with one or more individual authors and that the temporal scope of copyright protection in most cases is based on the lifespan of the author(s).

59. However, nowhere does the *Copyright Act* say that an author must be an individual.

60. Indeed, in respect of cinematographic works, the *Copyright Act* recognizes that copyright stems from a “maker” and the term of copyright is not dependent on a human’s lifespan.

C. SURYAST Is an Original Work That Would Not Exist Without Mr. Sahni’s or RAGHAV’s Individual Contributions

1) *RAGHAV Is Exercising Skill and Judgement*

61. The *Copyright Act* was developed in a time where generative AI did not exist. The legislators could not have conceived of a time where computers could generate unique skill and judgement as a generative AI is now capable of doing, and indeed in the work of SURYAST, has done.

³² Applicant’s Factum, *Samuelson-Glushko Canadian Internet Policy and Public Interest Clinic v Ankit Sahni*, FC File No T-1717-24, 26 June 2025 at para 9.

62. RAGHAV is designed to be capable of learning “complex features like textures and patterns in subsequent layers.”³³ This skill is then transposed using a technique called “neural style transfer”³⁴ which captures the semantic structure of styles³⁵ to extract “features of content and style”³⁶ and generate new stylizations and create a unique, distinct and disparate interpretation of the inputs.³⁷

63. The chosen sampling and expression of stylistic interpretation in the output are examples of RAGHAV’s use of judgement in the skills learned from the inputs. RAGHAV is actively making decisions on colour combinations, use of brushstrokes, styling, shifts in tone, hue and shade, etc. in developing the final output.

2) *The Copyright Act Was Created to Protect Original Works Such as SURYAST*

64. The entire essence of the *Copyright Act* is to incentivize the creation of works which did not exist before by granting a time limited monopoly to the author(s) (or subsequent assignees of copyright), subject to balancing those rights with certain users’ rights (e.g. fair dealing).

65. Accepting an argument that the incorporation of AI in the creation of a work means that copyright cannot subsist in it would disincentivize the creation of new works in contrast to the intention of the *Copyright Act*.

³³ Gupta, *Affidavit*, *supra* note 5 at para 11.

³⁴ *Ibid* at para 13.

³⁵ *Ibid* at para 20.

³⁶ *Ibid* at para 14.

³⁷ Sahni, *Affidavit*, *supra* note 1 at paras 12-13.

66. Recent news reports of musical works created entirely by AI being downloaded and enjoyed by large numbers of listeners³⁸ underscores that AI can create new works which are a benefit to Canadians.

67. If copyright does not extend to works created in whole or in part using AI, one of the fundamental underpinnings of copyright law will be lost.

D. The Recognition/Attribution of the Contributions of AI in the Creation of Works is Recognized in Several Branches of the Canadian Legal and Regulatory System

68. It bears mentioning that this Honourable Court and other branches of the Canadian Intellectual Property Office (notably the Registrar of Trademarks) have recently published guidelines for the use of AI in materials submitted to them.

69. For example, in accordance with this Court's Amended Consolidated General Practice Guidelines (the Guidelines), parties are required to declare when AI has been used to generate or create content in documents prepared for the purposes of litigation and submitted to the Court.³⁹ The Guidelines also refer to this Court's Notice on the Use of Artificial Intelligence in Court Proceedings, which includes further information and specific requirements on counsel, parties, and interveners in legal proceedings at the Federal Court when using AI to prepare materials filed with the Court.⁴⁰ Failure to do so may result in consequences for parties and/or

³⁸ David James, "This Band Has Millions of Streams on Spotify. The Only Problem — the Music and the Band Members Were Generated by AI" (14 July 2025), online: Entrepreneur <<https://www.entrepreneur.com/business-news/ai-generated-band-velvet-sundown-has-millions-of-streams/494589>>.

³⁹ Federal Court, *Amended Consolidated General Practice Guidelines* (20 June 2025), online: <https://www.fct-cf.ca/Content/assets/pdf/base/2025-06-20_Amended-Consolidated-General-Practice-Guidelines.pdf> at para 17.

⁴⁰ Federal Court, Notice To The Parties and The Profession - The Use of Artificial Intelligence in Court Proceedings (7 May 2024), online: <<https://www.fct-cf.ca/Content/assets/pdf/base/FC-Updated-AI-Notice-EN.pdf>>.

counsel, including the imposition of an adverse cost award or an order to show cause why the party or counsel in question should not be held in contempt.

70. Similarly, the Canadian Intellectual Property Office issued a practice notice titled “Use of AI in proceedings before the Trademarks Opposition Board” (the “Practice Notice”) which provides guidance for submitting documents in proceedings before Trademarks Opposition Board where AI is used to create or generate content in the document. The Practice Notice states that a party in a proceeding under sections 11.13, 38, or 45 of the *Trademarks Act* is expected to inform both the Trademarks Opposition Board and the opposite party if AI was used to create or generate any content in a document filed with the Registrar of Trademarks.⁴¹

71. While the Respondent appreciates that the focus of such practice directions is directed to issues other than copyright, such practice directions recognize that authors of works, such as lawyers and trademark agents, which create submissions and other works may use AI in the creation of the documents which they file. The practice directions which require notification that AI was used, while perhaps not changing that professional submitting the document must be fully responsible for its contents, nonetheless recognizes that the individual professional submitting the work is not the sole author of that work and attribution / recognition of AI is a necessary disclosure.

⁴¹ Canada, Canadian Intellectual Property Office, “Use of AI in proceedings before the Trademarks Opposition Board” (4 June 2025), online: <<https://ised-isde.canada.ca/site/canadian-intellectual-property-office/en/trademarks-opposition-board/use-ai-proceedings-trademarks-opposition-board>>.

PART V – RELIEF SOUGHT

72. The Respondent seeks:

- a. an Order:
 - i. Dismissing this application; and
 - ii. Declaring the Respondent and RAGHAV to be the co-authors of SURYAST;
- b. in the alternative, if the Court finds that RAGHAV is not an author of SURYAST, the Respondent seeks an Order declaring the Respondent to be the sole author of SURYAST; and
- c. such further or other relief as this Honourable Court may deem just.

73. For all of the foregoing reasons, the Respondent respectfully submits that the application for judicial review must be dismissed. As the Applicant has not sought costs, the Respondent does not seek costs either.

ALL OF WHICH IS RESPECTFULLY SUBMITTED this 16th DAY OF JULY 2025.

Jennifer Davidson

Gary Daniel and Jennifer Davidson
Counsel for the Respondent

PART VI – LIST OF AUTHORITIES

Authority
Statutes and Regulations
<i>Copyright Act</i> , R.S.C., 1985, c. C-42
<i>Industrial Designs Act</i> , R.S.C., 1985, c. I-9
<i>Patent Act</i> , R.S.C., 1985, c. P-4
<i>Trademarks Act</i> , R.S.C., 1985, c. T-13
Caselaw
<i>Bishop v Stevens</i> , [1990] 2 SCR 467
<i>Canadian Admiral Corporation Ltd v Rediffusion Inc</i> , 1954 CanLII 712 (CA Ex Ct), [1954] Ex CR 382
<i>Canada (Minister of Citizenship and Immigration) v Vavilov</i> , 2019 SCC 65
<i>Dunsmuir v New Brunswick</i> , 2008 SCC 9
<i>Théberge v Galerie d'Art du Petit Champlain Inc</i> , 2002 SCC 34
Secondary Sources
Canada, Canadian Intellectual Property Office, “Use of AI in proceedings before the Trademarks Opposition Board” (4 June 2025)
Canada, Innovation, Science and Economic Development Canada, “Consultation paper: Consultation on Copyright in the Age of Generative Artificial Intelligence” (05 December 2024)
David James, “This Band Has Millions of Streams on Spotify. The Only Problem — the Music and the Band Members Were Generated by AI” (14 July 2025)
Federal Court, Amended Consolidated General Practice Guidelines (20 June 2025)
Federal Court, Notice To The Parties and The Profession - The Use of Artificial Intelligence in Court Proceedings (7 May 2024)