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Toronto, Canada

shalev.ca

SKILLS

- Leadership
- AI & Machine Learning
- Entrepreneurship
- Creativity
- Writing
- Programming
- Communication and Public Speaking
- Critical Thinking and Problem Solving

INTERESTS

- AI
- Neuroscience
- Multi-Agent RL
- General Relativity
- Cellular Automata
- Latin
- Causality
- Mathematical Proofs
- LOTR
- Piano
- Physics and Light Transport Simulations
- Ancient Greek and Roman Civilization
- Ensuring a Positive Future for Humanity

Shalev Lifshitz

AI Researcher & Entrepreneur

18 years old, Canadian, and striving to develop the future of technology. My goal is to spark the next wave of human innovation and help humanity reach a new evolutionary step.

EDUCATION

Specializing in Computer Science, Minoring in Math and Psychology

University of Toronto

09/2020 - Present

WORK EXPERIENCE

ML Engineer - AI algorithms to automatically understand CT scans

Claronav

01/2020 - Present — *Toronto, Ontario*

I have been creating AI algorithms to improve surgical navigation at Claronav, a surgical navigation company in Toronto. Instead of a human having to locate and annotate various structures in CT scans, I teach machines to figure out the location of these structures on their own. The algorithms I created are now being used in surgical navigation systems around the world to understand these CT scans in less than half a second.

Researcher - Image search techniques to improve cancer diagnosis

University of Waterloo

06/2019 - 01/2021 — *Waterloo, Ontario*

Created a new histopathology image search technique to speed up and improve the diagnosis of cancer and other diseases. I performed this research at the University of Waterloo KIMIA Lab (a global leader in histopathology image search) and recently submitted the paper to ICIP 2021.

Researcher - Creating neural networks to behave more like the brain

University of Waterloo

09/2018 - 09/2019 — *Waterloo, Ontario*

While in high school, I worked with the University of Waterloo Prof. Hamid Tizhoosh to design a new type of neural network that aims to rethink the basic perceptron structure and move away from a feed-forward approach so that networks can be easily embedded in larger graphs (inspired by the more organic structure of biological neural networks). I implemented and developed the algorithm from scratch using only base mathematical functions. To do so, I used Linear Algebra, Calculus, and other university-level mathematics. I spent over 400 hours implementing our novel neural network from scratch while maintaining academic excellence (95+ GPA) and working on another project at the Hospital for Sick Children (Toronto). The research is published in our paper (listed below) which appeared in the 9th International Conference on Image Processing.

Researcher - Computer vision for faster and better diagnosis

The Hospital for Sick Children

06/2018 - 12/2019 — *Toronto, Ontario*

I researched AI and Computer Vision methods that analyze cell images to expedite the diagnostic and drug discovery processes at The Hospital for Sick Children in Toronto.

PUBLICATIONS

Subtractive Perceptrons for Learning Images: A Preliminary Report (09/2019)

In this preliminary work, we define the subtractive Perceptron (s-Perceptron), a graph-based neural network that delivers a more compact topology to learn one specific task. https://arxiv.org/abs/1909.12933

SPEAKING ENGAGEMENTS AND PORTFOLIO

Please visit my website at shalev.ca for videos of my speaking engagements and my portfolio.

AWARDS & ACHIEVEMENTS

C. David Naylor Scholarship from the University of Toronto ($20 000)

Winning Pitch at the McMaster University Fall 2018 Innovation Sprint

Best Startup at SAGE Canada