

sangw2ohan@gmail.com
(438) 501-7707

Sangwoo Han

github.com/therealsangwoohan
linkedin.com/in/sangw2ohan

Education

Montreal, Canada	Concordia University	September 2018 – May 2022
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- Bachelor of Mathematics and Computer Science, GPA: 3.52

Employment

Software Engineer	DNEG	May 2022 – Present
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- Addressing regular production bugs and improvements in existing Python services using Kanban to prioritize requirements and utilizing CI/CD pipelines to iterate rapidly.
- Led the conversion of crucial VFX pipeline tools from Python 2 to Python 3, improving average performance by 41%.
- Reduced API latency by 70% by optimizing SQL queries and adding a caching layer using Redis.

Software Engineer Intern	Atelier Paper	May 2021 – September 2021
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- Built a Single Page Application client in React.js, secured it against Cross-Site Scripting attacks with DOMPurify, and deployed it on AWS S3 and CloudFront to optimize delivery speed for international clients.
- Led daily Kanban meetings.

Projects

Deep Learning Library Made From Scratch in Python (Project)

- Reduced the time complexity of training a neural network from $O(s*m*(n^2))$ to $O(s)$ by vectorization back-propagation.

Glask: A Flask-like Web Framework Made From Scratch in Python (Project)

- Built a WSGI-compatible web framework like Flask without relying on third-party libraries.
- Implemented my own Object Relational Mapper.
- Published the framework to PyPI so everyone can download and use it.

Real Time Sign Language Detection (Hackathon, 2nd place)

- Built a React web app that detects sign languages through the webcam.
- Implemented the neural network with TensorFlow before converting the trained model to JSON.

Autonomous Driving in Grand Theft Auto V (Project)

- Programmed and trained a bot to autonomously drive in GTA V.
- Modeled the Deep Convolutional Neural Network after [AlexNet](#).
- Implemented [lane detection using Randomized Hough Transform](#).

AI Bot playing StarCraft II (Project)

- Built and trained a bot to beat StarCraft II in “Hard” difficulty using evolutionary learning.
- Implemented the neural network with TensorFlow and trained it for 15 days on the cloud.

Technical Skills

- Languages: Python, JavaScript, Java, C, Go, SQL
- Frameworks and Libraries: Node.js, Express.js, React.js, Flask, Spring, TensorFlow
- Tools: Git, GitHub, Docker, AWS, Maven, Jira, Jenkins, Confluence

