Nicolas Ong

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Experience

Moving AI Lab, University of Alberta — Edmonton, AB
Graduate Research Assistant · Supervised by Prof. Nathan Sturtevant — *2025 – Present*

- Built an AlphaZero implementation from scratch in JAX/Flax with parallelized self-play that sped up training by 64x on a SLURM compute cluster
- Analyzed AlphaZero training dynamics on solved Chinese Checkers, using game-theoretic ground truth to diagnose training anomalies and evaluate model accuracy

Department of Computing Science, University of Alberta — Edmonton, AB
Graduate Teaching Assistant – CMPUT 272 (Logic), INT-D 161 (AI) — *2024 – 2025*

- Self-taught weekly logic and proof material; presented solutions and fielded live questions to a class of ~100 students
- Built a Python + Canvas REST API + Google Sheets pipeline to automate peer review grading end-to-end

Natural Language Laboratory, Simon Fraser University — Vancouver, BC
Research Assistant · Supervised by Prof. Anoop Sarkar — *2023 – 2024*

- Reproduced entity linking methods from published papers using public repositories and models, then conducted follow-up ablation experiments
- Wrote and published a paper at NAACL 2024 and presented results at a poster session in Mexico City

Redmane Technology LLC — Vancouver, BC
Software Developer — *2021 – 2023*

- Built Redmane Canada's first live interface using the Azure ecosystem and REST APIs, saving the client thousands of hours per year of manual data transfer
- Developed case management software in C#/.NET, coordinating with product and operations teams in an agile workflow using JIRA and GitHub
- Used T-SQL scripts and queries to automate development work, investigate production issues, and implement data fixes
- Led client-facing design and go-live sessions; trained end users to ensure smooth organizational transitions

Education

University of Alberta — Edmonton, AB
Candidate, MSc Computing Science, 3.9 GPA — *2024 – Expected 2026*

- Coursework: Reinforcement Learning, Procedural Content Generation via ML, Robotics, Neurosymbolic Programming

Simon Fraser University — Vancouver, BC
BSc Computing Science (with Distinction), 3.73 GPA — *2018 – 2021*

- Coursework: Networking, Parallel Programming, Quantum Computing, Natural Language Processing
- President's and Dean's Honour Roll; scholarships for academic excellence

Projects

Robotics with the Duckiebot Platform
ROS, OpenCV, Python, PyBullet — *2025*

- Implemented PID-based lane following with computer vision and odometry-based localization

Ray Tracing Engine
C++, Vulkan — *2021*

- Developed a real-time ray tracer using GPU-accelerated compute shaders, rendering directly onto the Vulkan swapchain

tree-chan – Social Media Website
Node.js, PostgreSQL, JavaScript, AWS, Heroku — *2019*

- Full-stack web app deployed with AWS S3/SES and Heroku, featuring a tree-style post system with user authentication

Publications

Nicolas Ong, Hassan Shavarani, and Anoop Sarkar. "Unified Examination of Entity Linking in Absence of Candidate Sets." In *Proceedings of the 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Short Papers, pp. 113–123, 2024.

Skills

Languages: Python, C#, C++, Java, SQL (T-SQL, PostgreSQL), JavaScript, Lua, MATLAB
ML & Data: JAX, PyTorch, HuggingFace, scikit-learn, Pandas, NumPy
Tools & Platforms: .NET, ROS, OpenCV, Vulkan, Node.js, AWS S3, Azure, Firebase, SLURM, Docker, Git, JIRA
Topics: Reinforcement Learning, Deep Learning, LLMs, NLP, Game AI, Parallel Computing, Networking