Shang Hong Sim

simshanghong@gmail.com | github.com/shanghongsim | linkedin.com/shanghongsim | @shanghong_sim | Seattle

Education

Singapore University of Technology and Design

M.Eng (Research) in Computer Science, Thesis on reliable RAG systems in NLP — Sep 2023 – Dec 2024

B.Eng (Hons) in Computer Science — Sep 2020 – May 2024

- cGPA 4.85/5.0 (Honors with Highest Distinction)
- Recipient of highly selective **SUTD Global Distinguished Scholarship** (top 10%).
- Completed three graduate-level courses in first year to secure a **$15,000 research grant**.

Key Publications

- Trust-Align: Measuring and Enhancing Trustworthiness of LLMs in RAG through Grounded Attributions and Learning to Refuse. M Song*, **SH Sim***, R Bhardwaj, HL Chieu, N Majumder, S Poria. *ICLR '25 Oral*. (*Equal contribution)
- Ground-GRPO: Lessons from Training Grounded LLMs with Verifiable Rewards. **SH Sim***, TD Pala*, V Toh*, HL Chieu, A Zadeh, C Li, N Majumder, S Poria. arXiv:2506.15522, 2025. (*Equal contribution)
- Evaluating the Generation of Spatial Relations in Text and Image Generative Models. **SH Sim***, C Lee*, A Tan, C Tan. Preprint. (*Equal contribution)
- p53-dependent crosstalk between DNA replication integrity and redox metabolism mediated through a NRF2-PARP1 axis. GA Elfar, O Aning, TW Ngai, P Yeo, JWK Chan, **SH Sim**, L Goh, J Yuan, …, CF Cheok. Nucleic Acids Research

Professional Experience

Machine Learning Engineer, Oumi PBC (Enterprise Platform) — Aug 2025 – Present

- Owned end-to-end development of **on-policy distillation** for the enterprise platform, spanning training methodology, backend APIs, frontend workflows, and billing integration.
- Led **training science** for enterprise fine-tuning workflows, designing experiments and production-grade recipes for **SFT, RL, and distillation**.

Machine Learning Engineering Intern, Oumi PBC — June 2025 – Aug 2025

- Led **ConseqBench**, a benchmarking project evaluating how AI agents respond to risks in real-world environments.
- Built **RAG + GRPO** and **web-agent SFT** demos for **Project Inspire**, used in company pitch materials.

Senior Research Assistant, Singapore University of Technology and Design (Paper) — Feb 2025 – May 2025

- Developed **Ground-GRPO**, an RL-based fine-tuning method for improving grounded citation generation in LLMs.
- Designed reward signals to reduce unsupported citations and improve attribution quality in RAG-style generation.

Master's Student, Singapore University of Technology and Design — Sep 2023 – Dec 2024

- Trust-Align (Paper, GitHub): **First-author paper** on LLM trustworthiness metric and alignment dataset accepted at **ICLR 2025 (Oral)**; project received community recognition on Github (40 stars).

Bioinformatics Research Intern, IMCB, A*STAR (Paper, Thesis, Github) — May 2022 – June 2023

- Independently developed a bioinformatics workflow (in Python and R) to identify therapeutically significant gene sets.
- **Co-authored a manuscript** published at **Nucleic Acids Research** (leading journal in molecular biology, IF 16.6).

Machine Learning Research Intern, I2R, A*STAR (Slides) — May – Sep 2021

- Achieved a **45% reduction in latency** on brain signal decoding using ML and statistical methods (**Kalman Filter, RNNs**) while maintaining performance, on resource-limited BCI chips.

Bioengineering Research Intern, IBN, A*STAR (Poster, Judging Results) — Nov 2018 – Feb 2019

- Analyzed protein structures in multidrug-resistant bacteria; won 3rd place at A*STAR Talent Search among 600 projects.

Projects

MediRAG: Developed a **biomedical RAG pipeline** using **BGE**, **PubMed embeddings**, and **FLAN-T5 query expansion** to improve question-answering accuracy. (Sep 2023)

Maze AI: Built CNN, autoencoder, and reinforcement-learning models for maze solving using a dataset of **120k mazes**; awarded best AI course project. (Sep 2023)

Nugen Studio: Developed an **advanced RAG based educational chatbot**. Translated analysis of 20+ webapps into a custom front end design using **Figma** and **React**. Conducted **30+ user interviews** and 20 user product tests. (Aug 2022 – May 2024)

Awards

- Cloudsine Artificial Intelligence Award 2024: awarded to the top students in 50.021 Artificial Intelligence.
- High Performance Computing Innovation challenge 2022: 2nd place overall
- A*STAR Talent Search 2019**:** 3rd place (top 3 out of 600 participants in recognition of exceptional research ability)

Service

Climate Science, **Author**: Co-authored a course on the greenhouse effect for a climate education charity, impacting over 40 countries worldwide. (April – Sep 2020)

SUTD Rotaract Club, **Professional Development Director (EXCO)**: Led Rotaract's university wide professional development forum, attended by CEOs, senior Rotary Club Executives and over 50 student participants. (June 2020 – June 2021)

Skills

- Programming: Python, R, Bash
- ML / Data: PyTorch, Hugging Face Transformers, NumPy, pandas, scikit-learn, W&B
- LLMs / RAG: vLLM, LangChain, LlamaIndex, spaCy, NLTK
- Tools: Flask, React, Git, Azure