

Matthew Sebastian Ho

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Education

University of California, San Diego Ph.D. in Computer Science Advisor: Lianhui Qin · GPA: 4.00	Sep 2024 – Present
University of California, Santa Barbara B.S. in Computer Science Advisor: William Wang · GPA: 4.00	Oct 2020 – Dec 2023

Awards

Chancellor’s Award for Excellence in Undergraduate Research, UCSB (2023)
National Merit Scholar (2020)

Experience

Microsoft Research Deep Learning Group <i>Research Intern, Part-Time (Mentor: Michel Galley)</i> <ul style="list-style-type: none">Constructing new benchmarks and methods for LLM Memory, Reasoning, and Human + AI Collaboration	Sep 2025 – Present
UCSB NLP Group <i>Undergraduate Researcher (Mentors: William Wang, Michael Saxon, Sharon Levy)</i> <ul style="list-style-type: none">Led team on explanation-focused LLM reasoning benchmark (10,000+ examples).Designed MTurk workflow with custom JS validation and Rails backend.Implemented scalable evaluation pipelines using PyTorch, HuggingFace, and Pyserini.First-author of ICLR 2023 paper selected for oral presentation (Top 1.2%, of 4019 submissions).	Sep 2021 – Jun 2024
Benchling <i>Software Engineer Intern, Big Data Infrastructure</i> <ul style="list-style-type: none">Implemented batching in the Data Warehouse sync pipeline, reducing retried jobs by 92%.Reduced sync latency via PostgreSQL query optimizations and Celery job scheduling changes.Built “Ask Notebook” tool (hackathon winner) using Llama 2 + RAG (via Chroma).	Jun 2023 – Sep 2023
Amazon <i>Software Development Engineer Intern</i> <ul style="list-style-type: none">Built data revision viewing service used across 6+ teams with AWS Lambda, API Gateway, CDK, and React.	Jun 2022 – Sep 2022
ServiceNow <i>Software Engineer Intern</i>	Jun 2021 – Sep 2021

Publications

Ho, M. et al. *WikiWhy: Answering and Explaining Cause-and-Effect Questions*.
International Conference on Learning Representations (ICLR), 2023. **Oral (Top 1.2%, of 4019 submissions)**.
Ho, M. et al. *Proof Flow: Preliminary Study on Generative Flow Network Language Model Tuning for Formal Reasoning*.
NeurIPS 2024 System 2 Reasoning at Scale Workshop.
Ho, M. et al. *ArcMemo: Abstract Reasoning Composition with Lifelong LLM Memory*.
Preprint (under review). **ARC Prize 2025 Paper Track Runner Up**

Skills

Languages: Python, C++, Java, JavaScript, OCaml
ML / LLM: PyTorch, PyTorch Lightning, HuggingFace, Chroma
Tools: WandB, Hydra, Git, Pandas, Matplotlib
Cloud / Systems: AWS, Celery, PostgreSQL