Dron Hazra

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Education

University of Cambridge: Computer Science

Selwyn College | October 2022 - Present

Year 1+2: First class. Perfect scores in Discrete Math, Computer Networking, Foundations of Computer Science. Principal Tenor Saxophone in Cambridge University Wind Orchestra (CUWO).

Summer Programs

Summer Program for Applied Rationality and Cognition (SPARC) 2023
Quantum Cryptography School for Young Students (QCSYS) 2021
Canadian Mathematical Society Math Camp (Invitational) 2020

Experience

Research Intern: Center for Human-Compatible AI (CHAI)

Summer 2024

- Worked on generative world models under Shreyas Kapur and Stuart Russell (UC Berkeley)
- Trained diffusion models to infer 3-D scenes from single 2-D images using only synthetic data
- Achieved near-perfect 3-D scene inference on real-word images using diffusion-powered heuristic search augmented with rendering feedback

Software Engineer Intern: Zilliqa

Summer 2023

- Built **Persistence Data Transformer** (PDT), a robust and concurrent ingestion + indexing system for sharded blockchain persistence archives using Rust, PostgreSQL and BigQuery
- Worked on transaction replay and tracing for ledger state reconstruction

Student Fellow: X, the moonshot factory

Summer 2022

- Prototyped and pitched a new moonshot, solving outdoor air pollution to X leadership
- Achieved 25% reduction in concentration of <2.5-micron particles without any filters

Engineering Intern: Talk Social

Summer 2021

Research

RenderAttack: Hundreds of Adversarial Attacks Through Differentiable Texture Generation

Dron Hazra, Alex Bie, Mantas Mazeika, Xuwang Yin, Andy Zou, Dan Hendrycks, Max Kaufmann: NeurIPS 2024 Workshop on New Frontiers in Adversarial Machine Learning

- Work in adversarial robustness under Max Kaufmann and Dan Hendrycks
- Using differentiable procedural textures to create novel adversarial attacks on vision models
- Contributing set of adversaries 10x larger than any other benchmark in the literature

Awards

2024 Most Impressive Technical Achievement in Cambridge CS Part IB Group Project
2023 Polaris Fellow (sponsored by Entrepreneur First)
2022 Canadian Computing Competition Honour Roll (top 2% nationally)
2021 Canadian Mathematical Olympiad Qualifier (Top 50 in Canada)

Skills

Machine Learning Research: Python, PyTorch, JAX, Hydra, Slurm, W&B, matplotlib, pandas
Distributed Systems: Rust, PostgreSQL, Docker, BigQuery, Google Cloud
Web Development: JavaScript/TypeScript, React, Next.js, tailwind, MongoDB