Ethan Kharitonov

Github: github.com/ethan-kharitonov
Linkedin: linkedin.com/in/ethan-kharitonov

Ethan.Kharitonov@gmail.com
647-408-3894

EDUCATION

- **University of Toronto**

  Computer Science Specialist, Mathematics Major; cGPA: 3.90/4.00   *September 2021 - April 2025*

  Notable courses: *Real and Complex Analysis, Abstract Algebra (Groups, Rings, Modules and Galois Theory), Graph Theory, Number Theory, Probability and Statistics, Topology, Axiomatic Set Theory, Algorithms and Complexity, Intro to AI, Mathematical Modelling and Theory of Computation*

EXPERIENCE

Amazon

Software Developer Engineer Intern   *May 2024 - August 2024*

- Built **AWS** infrastructure using **AWS CDK** and **CloudFormation** in order to streamline the creation and deployment of **Alexa** testing scripts
- Wrote testing scripts in **Kotlin** using the **AWS Lambda** and **AWS VPC** APIs as well as internal Amazon **Alexa** APIs
- Used internal Amazon frameworks to design a **CI/CD** pipeline which deploys artefacts to **S3** and **Lambda**
- Learned how to use the internal Amazon build and development tools idiomatically

Dayforce

Full Stack Developer Intern   *May 2023 - August 2023*

- Designed and implemented **CI/CD** pipeline using **Azure YAML**, saving 300+ hours of total time spent manually building and deploying
- Managed the environment of multiple **IIS** applications including build and deployment automation as well as site setup and configuration

May 2022 - December 2022

- Developed a productivity tool used daily by over 20 QA engineers to make running certain tests approximately 50 times faster
- Designed and implemented a **React** application using **React Router** and the **Material UI** component library
- Developed an API using **ASP.NET Core** and **Entity Framework**
- Deployed the API and **React** app to **IIS** using **Azure Pipelines**

CLUBS

Quantitative Finance Club at UofT

Co-Founder & Vice-President   *January 2024 - April 2025*

- Planned and hosted an "Intro to Quant Finance" workshop, attended by ~**25 students**, aimed to improve **financial literacy** in students as well as introduce some basic ideas from **derivative pricing theory**
- Coordinated a guest lecture on **portfolio optimization** using **machine learning**, featuring a PhD researcher
- Designed and judged a **financial modeling** competition attended by ~**30 students**
- Managed club logistics, including **registering** with relevant authorities, **recruiting and hiring** students for various roles, and overseeing all club operations at a high level

PROJECTS

A Spatial SIR Model with Individual Mobility

https://github.com/ethan-kharitonov/SIR_Model/blob/main/Reports/Model.pdf

- Designed and formulated SIR-style model for disease spread in a multi-hub community with inhomogeneous interactions between people
- Proved structural theorems to gain a deeper understanding of the model
- Used ideas from **Markov chain theory** and **group theory** to gain insight into the long-term behaviour of the virus
- Implemented Monte Carlo simulations, analysed results and conducted sensitivity analysis

Cindr – Mobile Application for Cancer Cell Classification

Lunenfeld Tanenbaum Cancer Research Institute

- Developed a mobile application enabling pathologists to accurately classify cancer cell images via an intuitive interface
- Designed and built a scalable **Firebase**-based backend using **Python**, featuring real-time updates, secure user authentication, and image processing capabilities
- Collaborated with the frontend team to integrate backend services

SKILLS AND INTERESTS SUMMARY

- **Languages**: C, C#, Python, Java, Kotlin, TypeScript, PostgreSQL, CSS, HTML
- **Frameworks**: React, React Router, AWS SDK and CDK, ASP.NET Core, Entity Framework, SignalR, Matplotlib
- **Tools**: GIT, LaTeX, Azure boards, Xunit, Pytest, Postman, Fiddler
- **Professional interests**: Algebra, Theory of Computation, Model Theory, Real Analysis, Cryptography and AI