Harrison Chiu

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Languages: Python, Scala, JavaScript/TypeScript, Java, SQL, C++/C, HTML/CSS, C#, Swift
Technologies: NodeJS, NumPy, AWS, React, Redux-Saga, HDFS, PyTorch, GraphQL, Django, OpenCV, Azure

Education

University of Waterloo *2020 - 2025*
Bachelor of Software Engineering | CAV: 91.6%, GPA: 3.9/4.0 - Dean's List x7

Experience

X Corp (formerly Twitter) | Software Developer *May 2024 - Aug 2024*

- Achieved **+21.9%** user follow actions by rebuilding, feature-selecting, and training a new user search ranker **PyTorch** model; **saved $100k yearly** by migrating user engagements training data pipeline with **8M+** daily users in **Scala**
- Improved **X Trends** by writing **Django** endpoints and tuning LLM prompts to provide global news summaries for **28M users** via real-time posts; designed and built a flagging platform + CI pipeline to concurrently auto-test PRs in **Python**
- Enhanced **70M+** daily searches by optimizing a query rewriting pipeline to reword input text based on user-intention

Databricks | Software Developer *Jan 2024 - Apr 2024*

- Spearheaded **Delta Live Tables** feature to query streaming tables and materialized views on performance-enhanced compute clusters, simplifying streaming & batch ETL orchestration and compute using **Scala**, deployed to **2k+** users
- Mitigated **three P0 vulnerabilities** related to view dependencies by designing and implementing robust security checks; resolved significant table permission inconsistencies, enhancing system integrity and security for **5k+** users

Intuit | Software Developer *May 2023 - Aug 2023*

- Architected and led the development of a **TypeScript CLI** to auto-generate **Java** integration test files by parsing and processing data for **100+ TurboTax** user pages to validate end-to-end customer flows, securing **90% line coverage**
- Wrote a **boolean expression solver** which tests visibility conditions of **3k+ UI assets**, recursively handling **40+ expression types** accounting for nested negation, functions, variable type, inequalities, and arithmetic

Faire | Software Developer *Sept 2022 - Dec 2022*

- Implemented, tested, and shipped a brand product recommendation email to **boost annual GMV projection by $500k** using MJML to render personalized promos supporting localization and compatibility across email clients
- Spearheaded the **open-source launch** of npm library @mjml-react by writing GitHub Actions to auto-deploy builds, migrating to **TypeScript** for strict type safety, and authoring contributor guides to support **350k+ global downloads**
- Initiated a platform-wide HTML sanitization process in order to mitigate **60+** brand portal **XSS attack vulnerabilities**

Move with Fleet | Software Developer *Jan 2022 - Apr 2022*

- Launched a catalog showcasing **85+ transit clients** in **React**, **Redux-Saga** & **Django** with Segment analytic tracking
- Optimized **SQL** queries to create usage reports of **250+ users with 15% speedup** using **Django** ORM and Template
- Created mobile views to **improve PCI security compliance by 25%** via Stripe API (i.e. virtual cards) in **React Native**

Hockeystick | Software Developer *May 2021 - Aug 2021*

- Connected **80+** startups with venture capital by **deploying a matchmaking platform** in **React**, **GraphQL**, and **C#**

Projects

playhoarder.com | Daily Web Puzzle - **2k users, 55k+ plays, peak 8k daily** (only half are from me)

ClassifAIcation | Self-Engineered Python Neural Networks

- Developed a classification vanilla-architecture neural network from scratch **Python** and **NumPy** with **92.8% test accuracy** on handwritten digits; deployed as a web-app to **predict as users draw** in real-time

Sea OS | Real-Time Operating System (ARM)

- Engineered a **real-time OS in C** to multitask **6+ processes** using a multi-level feedback queue scheduling algorithm
- Programmed advanced features such as **dynamic memory allocation**, inter-process communication via **message queues**, priority switching & preemption, interrupt-driven I/O, timer interrupts, and user privileges for memory chunks