

Francis He

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Skills

Technical Languages: Python, TypeScript/JavaScript, Rust, HTML/CSS, C#, C, R

Tools/Libraries: PostgreSQL, MySQL, React, Node, Git CI/CD, Unity, Helm, Terraform, Arduino, UE5, Unix/Linux

Services/Platforms: Google Cloud Platform (GCP), Kubernetes, Docker, Heroku, AWS

Non-Technical: Clarinet, Piano, Violin, Ultimate Frisbee, Soccer, Ski/Snowboard, Hockey, Badminton, Golf

Work Experience

University of Toronto

Toronto, ON

Software Developer

Jun 2024 - Oct 2024

- Achieved 250-millisecond spatial identification of presenters through the development of a Python/Bash software allowing the simultaneous operation of four PTZ cameras using intelligent voice-tracking technology
- Engineered a TCP/IP pipeline between the microphone, speaker, and a controlling device, utilizing 3D matrix transformations for precise pinpointing of individuals

Replicant Inc.

San Francisco, CA

Software Engineer Intern

May 2023 - Aug 2023

- Architected a scalable, serverless Docker/Kubernetes/Postgres service that enabled the delivery of shortened URLs via SMS and for important data statistics to be tracked from 3000+ customers per month and stored in a database with a strict observance for GDPR compliance
- Increased successful user interactions by 25% through the improvement of conversational flows through the integration of LLM chat-bots within the user experience journey
- Reduced 50% of average data analysis time for all staff involved by revamping existing internal auditing systems and integrating enhanced data query options

BluRoot Inc.

Toronto, ON

Software Engineer Intern

Sept 2022 - Dec 2022

- Developed a secure payment gateway using secure Rust algorithms combined with client-side caching via Redis; focused on attaining efficient processing speeds and a solution that reduced average transaction time from 30 minutes to under 5 minutes (500% reduction)
- Reduced Rust codebase compilation times by 20% through the implementation of custom serialization and deserialization algorithms and optimized data structures with *serde-rs* crate

Canada Startup Company

Toronto, ON

Full Stack Developer Intern

Jan 2022 - May 2022

- Devised a robust JavaScript transcription framework leveraging Twilio RestAPIs that streamlined VOIP messaging processes; achieved zero instances of unanswered stakeholder inquiries during all project phases
- Initiated weekly touchpoints with clients throughout the end-to-end product development phases, from inception to the deployment of full front-end and back-end products, generating substantial positive responses regarding approachability and detailed insights into progress across three simultaneous app developments

Riff Inc.

Toronto, ON

Full Stack/ML Engineer Intern

May 2021 - Sept 2021

- Built an advanced Feedback Engine leveraging Python, React, and FireBase (NoSQL), resulting in a music player interface that maintained seamless performance for 1,000+ active users and NLP for user feedback

Projects

First-Person Shooter Aim Assistance

- Pioneered the development of a multi-platform automation system using OpenCV for computer vision, enabling precise hardware control of cursor functions via Arduino; reduced latency in response time by 40%

Education

University of Waterloo

Ontario, Canada

Bachelor's - Psychology, Computer Science

April 2024