University of Waterloo

Co-operative Work Terms

Lefan Hu
21022110
2B Computer Engineering, Honours, Co-operative Program

Work Term	Employer	Evaluation
May - Aug 2023	Telus	EXCELLENT
	Telus Communications	
	Vancouver British Columbia Canada	
	Software Developer Intern	
Jan - Apr 2024	Ciena Corporation	EXCELLENT
	Ottawa Office	
	Ottawa Ontario Canada	
	Automation Tools Development Co-op	

Planned Future Work Term(s)
May - Aug 2025
Jan - Apr 2026
Sep - Dec 2026

Lefan Hu

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Education - University of Waterloo

University of Waterloo - 3rd Year *Waterloo, Canada*
Bachelors in Computer Engineering *Sept. 2022 - Dec. 2026*

Work Experience

CIENA Corporation *Ottawa, ON*
Automation Tools Development Intern *January 2024 - April 2024*

- Developed major releases of the Extract Logs application in **Python**, an internal tool used by **100+ engineers** to aggregate information and locate errors within log archives, eliminating hours of manual labour on every run
- Created **Splunk** search queries for well known signatures of known and recognizable errors on hardware devices, increasing debug efficiency by **>30%** for common errors
- Used **Python** and **JupyterLab** extensively for general automation and parsing of complex log archives, creating a comprehensive suite of scripts for aiding log analyzer engineers

TELUS Corporation *Toronto, ON*
Software Developer Intern *May 2023 - August 2023*

- Contributed to major system, auto-callout (ACMP), used by **hundreds** of field technicians. This system fully automates the dispatching of technicians in response to outages, reducing response times from **hours to seconds**
- Built, tested, and deployed **production** Docker images of ACMP service to production **Docker swarms**
- Developed POC **Google Chat** service for internal database lookup without compromising security by adopting the **publisher-subscriber model** for secure communication between networks
- Used **serverless** architecture and **Spring Boot** for chat service, reducing server cost by **20 times** compared to other internal services while maintaining **sub-second** response times

Projects

Keiyoushi Extensions |

Open Source | Android Studio, **Kotlin**, Gradle, **Mobile Development**, Git *August 2024 - Now*

- Contributed to **open-souce** suite of webscraping extensions as part of the **Tachiyomi/Mihon** manga reader system
- Utilized **Kotlin** to develop and maintain various extensions for **tens of thousands of users**, ensuring focusing on enhancing user experience and quality features
- Worked in a collaborative environment, addressing issues and feature requests from the community, and following an **open-source development model**

Stable Diffusion |

XL LORA Adapter | PyTorch, LORA, Nextjs, Cloudflare, HuggingFace, Transformers *January 2024 - May 2024*

- Generates high quality images of Taylor Swift based on text prompt
- Tuned custom **LORA adapter** for SDXL model on **AWS** G4DN GPU instance by leveraging **HuggingFace** Accelerate
- Hosted on HuggingFace Serverless Inference, eliminating waste on idling resources

Interqu Interview Platform |

AWS Powered AI Interview Platform | **Nginx**, **Docker**, Lambda, Statemachine, SAM *June 2023 - April 2024*

- Utilizes AI to analyze speech, expression, and general flow of a mock interview to provide valuable feedback for students
- Adopted AWS **Serverless Application Framework** (SAM) to leverage cloud computing at low costs in conjunction with **AWS Statemachine** to manage various processing states
- Created **Angular** front-end and AWS back-end processing and api management handled by: AWS **SAM** (Statemachine, Lambda, API Gateway, GraphQL), PyTorch, ChatGPT

Hive-HQ - Hackathon Winner |

Hack The North 2021 | **Google Cloud**, Transformations, **React.js**, **OpenCV**, **Pytorch** *Sept. 2021 - Sept. 2021*

- Identifies high traffic areas in public spaces to ensure safe distancing during pandemic by leveraging **AI**
- Loaded **YOLOv5** model onto **PyTorch** for recognition and annotation of individuals on ffmpeg stream in real-time

Skills

Languages	Python, C/C++, Java, Kotlin, HTML/CSS, JavaScript, VHDL, Matlab, LaTeX
Technologies	PyTorch, MongoDB, Postgre, Docker Swarm, AWS (Lambda, API Gateway, EC2), React, Nextjs, Nginx, Spring Boot, GCP, GKE, Pub/Sub, Cloud Functions, Linux, Shell (Bash/Zsh), Scrapy

UNIVERSITY OF WATERLOO
UNOFFICIAL GRADE REPORT

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Winter 2025

PHYS	234	Quantum Physics 1	
ECE	350	Real-Time Operating Systems	
ECE	327	Digital Hardware Systems	
ECE	380	Analog Control Systems	
ECE	318	Communication Systems	
ECE	301	Information Session	

Term Average: N/A   Decision:

Fall 2024

PD	22	Eng Professionalism & Ethics	

Term Average: N/A   Decision:

Spring 2024

ECE	207	Signals & Systems	70
ECE	208	Discrete Math & Logic 2	86
ECE	224	Embedded Microprocessor Sys	77
ECE	203	Probability Theory & Stats 1	83
ECE	202	Information Session	
ECE	252	Systems Program & Concurrency	98
ECE	298	Instrument & Prototyping Lab	83

Term Average: 82.82   Decision: Excellent Standing

Winter 2024

PD	20	Strategies for Career Success	CR
COOP	2	Co-operative Work Term	CR

Term Average: N/A   Decision:

Fall 2023

ECE	204	Numerical Methods	80
ECE	205	Adv Calculus 1 (ECE)	79
ECE	250	Algorithms & Data Structures	76
ECE	109	Materials Chemistry for Eng	73
ECE	201	Information Session	
ECE	240	Electronic Circuits 1	59
ECE	222	Digital Computers	86

Term Average: 75.73   Decision: Good Standing

Spring 2023

PD	19	Tactics for Workplace Success	CR
COOP	1	Co-operative Work Term	CR

Term Average: N/A   Decision:

Winter 2023

ECE	124	Digital Circuits & Systems	86
MATH	119	Calculus 2 (Eng)	84
ECE	106	Electricity & Magnetism	83
ECE	192	Eng Economics & Society Impact	94
ECE	108	Discrete Math & Logic 1	83
ECE	102	Information Session	
ECE	140	Linear Circuits	79

Term Average: 84   Decision: Excellent Standing

Fall 2022

ECE	105	Classical Mechanics	85
ECE	150	Fundamentals of Programming	91

ECE	190	Eng Profession & Practice	84
ECE	198	Project Studio	87
GENE	119	Problems Seminar	
MATH	117	Calculus 1 (Eng)	83
MATH	115	Linear Algebra (Eng)	91
MTHEL	99	First-Year Math Readiness	CR
		First year readiness	
ARTS	190	Topics: First-Year Arts	80

Term Average: 85.92   Decision: Excellent Standing