Eric Liu

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Technical Skills

Languages & Tools Python, C/C++, Swift, Java, R, Matlab, Postgres, SQL, Redis, Jenkins
Machine Learning SciKit-Learn, PyTorch, AutoGluon, Keras, XGBoost, CoreML, Pandas, NumPy
Cloud/Web Amazon Web Services (AWS), S3, Lambda, API Gateway, DynamoDB, EC2, EKS, Kubernetes, Hadoop, Spark, Flask
Technical Skills Automation, Instrumentation, Test, Factory Operations, System Design/Integration, Project Management

Experience

Apple
ML/Software Engineer, RF System Engineer *June 2017 – Present*
- AI/ML for instrumentation, radiation pattern prediction, antenna performance prediction.
- Design and develop software for test, calibration, instrumentation, automation for wireless systems: GSM/LTE/5G/Experimental
- Oversee software projects from design to deployment, provide guidance and oversight for engineering initiatives.
- Develop/manage cloud infrastructure to support engineers and factories. Manage factory operations, engineers, contractors.

RF Cellular Test & Automation Engineering (Co-op/Intern) *August 2016 – December 2016*
- Developed test application to automate CMW500 for testing cellular technologies (LTE, GSM, UMTS).
- Work with RF engineers to develop cellular tests from 3GPP and system requirements, correlation study between solutions.
- Work with contract manufacturers to validate and deploy RF test solution in a production environment.

ON Semiconductor DSP Firmware and Algorithm Development (Co-op/Intern) *August 2015 – December 2015*
- Develop multi-core DSP audio encoding/compression (G.722, CVSD), custom codec to increase compression, retaining quality.
- Evaluate codec performance, develop firmware tests, fixes for reliability and security. Optimize assembly and C code.
- Develop algorithms for memory management to optimize usage and read/write, data transfer speed.

Department of National Defence Defence Research & Technical Lead (Co-op/Intern) *January 2015 – May 2015*
- Design and develop high performance and versatility simulator for sensor data fusion research in intelligence aircraft (ISR).
- Developed algorithms to track targets, identify/assess threats, predict trajectory, conforming to NATO military standards.
- Collaborate with defence companies, foreign engineers, scientists, air force pilots for development of future research projects.

Symantec Network Security Software Engineering (Co-op/Intern) *May 2014 – August 2014*
- Developed tests, fix bugs for access and content control, encryption, security vulnerabilities and exploits, system crashes.
- Created comprehensive automated and manual tests based on future project road map.

Siemens
Network Hardware/Firmware Engineering (Co-op/Intern) *August 2013 – December 2013*
- Generate, analyze packets to debug complex computer networks. Develop and test recovery systems and solutions (PRP, HSR).
- Implemented and tested high precision clock synchronization, contributing to IEEE 1588 Precision Time Protocol (PTP).

Network Software Engineering (Co-op/Intern) *January 2013 – April 2013*
- Develop automated tests, fix network security and reliability bugs, develop libraries for IETF protocols.
- Back-end server and in-house tools development for automating calculations and documentation.

Education

University of Illinois Urbana-Champaign **Masters**
Computer Science and Data Science – Deep Learning, Statistical Machine Learning, Natural Language Processing

University of Waterloo **Bachelors**
Electrical Engineering – Radio Frequency, Wireless Systems, Computer Architecture, Integrated Circuits

Selected Projects

Movie Recommendation Web App (Recommender Systems) *Statistical Learning: 2022*
Survival Prediction Using Transformers (SurvTRACE Analysis, Transformers, BERT) *Deep Learning: 2022*
Intelligent Web Link Browsing (Information Retrieval, Recommender Systems) *Information Retrieval and Data Mining: 2021*
ACTR - Asteroid Characterization Through Reflactance (Aerospace, DSP, Sensors) *Space Apps Hackathon: 2016*
MyOrchestra: Virtual Orchestra (Sensors, Data Fusion, DSP, IoT) *WearHacks Hackathon: 2016*

Research

Memory Coherency and Approximate Caching *University of Waterloo - Department of Electrical and Computer Engineering: 2016*
Effects of Haptic Feedback in Virtual Reality *University of Waterloo - Department of Electrical and Computer Engineering: 2016*
Data and Sensor Fusion for ISR Systems *Department of National Defence - Defence Research and Development Canada: 2015*