

# 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

June 2017 – Present

- AI/ML for instrumentation, radiation pattern prediction, antenna performance optimization, predict hardware design issues.
- 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

- Develop 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).
- Develop 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

- Develop tests, fix bugs for access and content control, encryption, security vulnerabilities and exploits, system crashes.
- Create 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).
- Implement 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 Reflectance (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