

ALEX EMANUELSON

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☎ (360) 630-1873

📍 Seabeck, WA

in alex-emanuelson

EXPERIENCE

Graduate Teaching Assistant

Western Washington University

📅 Jan 2019 – June 2019

📍 Bellingham, WA

- Facilitated a collaborative learning environment during lab sessions
- Developed Bash and Python grading scripts to help automate the grading process for future teaching assistants
- Provided office hours and set up review sessions for hundreds of computer science students

Software Development Intern

SPIE

📅 July 2017 – Feb 2018

📍 Bellingham, WA

- Updated, maintained and created new functionality for ASP.NET MVC 3 pages on spie.org website
- Leveraged technologies such as C#, JavaScript, jQuery, SQL, HTML and CSS
- Worked in a collaborative team environment to develop functionality according to technical and business specifications

PROJECTS

Network Anomaly Detection System

Researcher

- Researched, designed and implemented an open source system to statistically analyze and flag anomalous network traffic using ERGM and ARMA models
- Modeled large networks as graphs and simulated various cybersecurity threats, such as DNS exfiltration, using R and Python
- Utilized the ELK stack to manage and process billions of network data points

Custom LaTeX Parser and Compiler

Engineer

- Designed and implemented a data pipeline which parses, using Jison, and compiles user supplied LaTeX equations into executable code to run against a data set
- Built a fluid UI/UX rendering LaTeX symbols in real time using MathJAX, as well as producing a comprehensive output
- Collaborated with a client from requirement gathering to product launch

HPC Performance Capture Tool

Lead Engineer

- Developed an open source API for capturing performance metrics across processes at the thread level
- Integrated the PAPI library for configuration of collected data, such as number of L1 cache misses
- Extended API flexibility for use in Fortran, C and C++

EDUCATION

M.S. Computer Science

Western Washington University

📅 Sep 2018 – June 2019

Honors B.S. Computer Science

Western Washington University

📅 Sep 2015 – June 2018

SKILLS

Programming

Java Python C C++ C# R
JavaScript SQL Scheme

Tools & Frameworks

Git Bash Django Docker
REST API TensorFlow
ASP.NET MVC 3 Node.js
Jupyter Notebook JIRA TFS

INTERESTS

- Data Science / Machine Learning
- Cloud Computing
- Cybersecurity
- Data Engineering

INVOLVEMENT

Budget Authority of WWU

Whiteboard Coders

Western Washington University

📅 Sep 2016 – Sep 2018

- Maintained and managed financial documents pertaining to club operations
- Organized monthly events for club recruitment

Computer Science Mentor

Western Washington University

📅 Jan 2016 – June 2018

- Volunteered to teach computer science fundamentals, such as data structures, to new students
- Provided guidance and advice to students wishing to pursue a computer science degree