Alexander Lee

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Education

University of Illinois at Urbana-Champaign May 2019

B.S. Computer Engineering, Dean's List

Coursework:

(In Progress) Distributed Systems, Computer Security, Probability with Engineering Applications
(Completed) Algorithms & Models of Computation, Computer Systems Engineering, Foundations of Data Science, Data Structures, Discrete Structures, Digital Systems Laboratory, Computer Systems and Programming, Differential Equations, Analog Signal Processing, Introduction to Computing, Introduction to Electronics

Experience

Software Engineering Intern, Jump Trading Champaign, IL June 2018 - August 2018

Working under Core Development on the Trading Platform team.
Writing highly performant C++ code for Jump's high frequency algorithmic trading system (Bitcoin).

Software Engineering Intern, Leidos Arlington, VA January, March, May 2018

Worked with members of the Advanced Solutions team to develop an automated analysis model to simulate refugee movement under varying environments.

Software Engineering Intern, Capital One Champaign, IL September 2017 - October 2017

Worked on developing a classifier using machine learning to detect Botnet traffic on external facing websites.

Software Engineering Intern, CME Group Chicago, IL May 2017 - August 2017

Worked under Trade Execution Systems on the Order Entry team.
Developed python module to automate AWS EC2 instance life-cycle.
Created frameworks to deploy and test critical internal applications.

Projects

Chord: A Scalable Peer-to-peer Lookup Protocol for Internet Applications Distributed Systems Project

Implemented the Chord lookup algorithm under 8-bit node and key identifiers with one client.
Handled real-time dynamic network modification for node joining and crashing.
Used Google Protocol Buffers to implement message passing between nodes over a TCP connection.

Using Machine Learning to Forecast Market Volatility Hackathon at CME Group, 3^{rd} place

Trained an artificial neural network with historical market data to predict volatility within the next hour.
Fluctuated per-order transaction fees based on predicted volatility to maximize revenue.
Built using the REST API, pandas, numpy, and scikit-learn.

Brick Breaker Game Digital Systems Laboratory Project

Implemented a graphic-intensive Brick Breaker game playable with a VGA Monitor, USB keyboard, & DE2-115 FPGA board. Built using SystemVerilog, C, & Python.

Skills

Languages: C, C++, Java, x86, SystemVerilog, Python, SQL, HTML, CSS, Javascript, ROBOTC, LaTeX
Client: Bootstrap, React
Cloud: AWS, CloudClient
Debugging Tools: GDB, Valgrind, ASAN
Version Control: Subversion, Git
Automation: Ansible, vRa