

Luke Thomas

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Summary

Professional mid-level software development engineer with 6+ years of experience, seeking full-time employment as a U.S. citizen, willing to relocate.

Work Experience

Amazon Web Services

Seattle, Washington

Software Development Engineer I

Aug 2020 – Feb 2024

- Lead our region-expansion efforts and was the team's point-of-contact to support the standup of classified data centers for U.S. government entities, involving contracts worth billions of dollars.
- Developed within an 8+ microservice architecture utilizing Apache Spark, AWS Lambda, DynamoDB, S3, EC2, EMR, & Cloudformation to pre-aggregate petabytes of AWS billing data for 14+ downstream internal clients such as AWS Cost Explorer, including on-call duties and handling client tickets.
- Corrected an inefficiency in our system which reduced our infra costs by over \$45k/month.
- Designed a project for and mentored an intern, and ramped up new-hires for on-call duties.
- Wrote multiple technical 'one-pagers' detailing trade-offs of proposed changes to our systems, which were reviewed by the team and resulted in the creation of multiple high-value deliverables.

Maxentric Technologies

San Diego, California

Software Engineer (Part-time)

Jan 2019 – June 2020

- Worked ~25 hours/week while attending university.
- Refactored and partially redesigned a UDP-based delay-tolerant network protocol in Java, causing a 34% reduction in lines of code and 29% increase in protocol efficiency.
- Implemented Producer & Consumer design pattern for concurrent packet transmission and reception.
- Captured incoming and outgoing packets using tcpdump, parsed PCAP files using Python scapy library.
- Collected metrics from hundreds of nodes into an SQLite database, then utilized open-source Plotly.py python library to automate the graphing and visualization of key metrics for stakeholders.
- Created a proof-of-concept Android app written in Kotlin to test and demo our UDP network protocol.
- Played a vital role in technology demos to secure Phase I-extension funding from the U.S. department of defense's Small Business Investment Research (SBIR) program.

Amazon Web Services

Seattle, Washington

Software Development Engineer Intern

Sept 2018 – Dec 2018

- Designed and individually implemented Tag API functionality in Java for an upcoming internal AWS versioned database service, leveraging DynamoDB as a NoSQL backend and gained knowledge of its partition key architecture and design patterns used to avoid hot partitions.

Intel

Portland, Oregon

Software Engineering Intern

June 2018 – Sept 2018

- Utilized Apache Kafka & Java to create real-time networking analytics solutions for detecting large flows and routing loops, visualized using Grafana dashboards with an InfluxDB timestream database backend.

- Incorporated Cloudflare's open-source Golang project GoFlow to produce sFlow network metrics as a data source into Apache Kafka.

Maxentric Technologies

San Diego, California

Software Engineer (Part-time)

Jan 2017 – June 2018

- Created an HTML/CSS/JavaScript/Bootstrap web-app to visualize custom network topologies, utilizing open-source Vis.js library for graph rendering and Firebase for storing exported topologies as JSON.
- Wrote multi-threaded Python scripts to automate the provisioning and configuration of Rackspace cloud hosts, utilizing iptables to simulate multiple subnet and high packet loss scenarios.
- Gained hands-on experience with TCP/IP networking, including packet construction and parsing, network analysis with Wireshark and tcpdump, Babel network routing protocol, and EMANE virtual interfaces.

Education

University of California, San Diego

B.S. Computer Engineering

- GPA: 3.907 (Upper Division), 3.472 (Cumulative)
- Coursework: Algorithm Design & Analysis, Advanced Data Structures, Operating Systems, Compilers, Intro to AI Search & Reasoning, Computer Architecture, Programming Languages, etc.

Projects & Awards

Studyspace.me, First Place, Team DANK

April 2017

- HTML/CSS/JavaScript website with MongoDB backend, 1st out of 40 teams.
- Wrote the account management page, including selecting classes and changing passwords.

HaliteBot, Halite Programming Competition

December 2016

- Python AI for Two Sigma's online competition, implementing flood fill algorithm for pathfinding.

Skills

Languages

- Java; Python; JavaScript; SQL; C; C++; C#; HTML; CSS; TypeScript; SPARC assembly; Shell scripting

Tools

- Git; Vim; Unix/Linux; Bash/Zsh; Apache Kafka; AWS EC2; S3; Lambda; Cloudformation; SQS; SNS