

FREDERIK HOFFMANN

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EDUCATION

Georgia Institute of Technology

M.S. Computer Science

2021 - 2024 (expected)

Coursework Overview: Operating Systems, Multi-threaded Programming, Artificial Intelligence, Computer Architecture, Computer Networks, Information Security

University of California, Santa Barbara

B.S. Physics

2017

EXPERIENCE

Amazon Web Services (AWS)

2022 - 2023

Software Development Engineer

- Developed attribute-based access control service. Utilized Java, JUnit, DynamoDB, KMS, AWS Identity. Allows AWS OpsCenter customers (56K active WoW) to increase security posture by downscoping resource access for users based on resource metadata, AWS context keys.
- Automated security tests for 13 internal/external APIs, bringing coverage to 100%. Used Python, AWS SDK for Python (boto3), PyTest, Fargate. Deployed tests into release pipeline in order to gatekeep promotions, generate tickets on failure. Improved team development velocity from months to weeks. Wrote documentation to aid future support.
- Implemented new feature to support cross-account resource access. Initial design was dependent on high latency API call. Improved performance by using Java, DynamoDB, SQS and SNS to periodically update/cache data, determine if caller has appropriate permissions. Cache solution reduced latency by up to 12 sec in avg use case.
- Created CloudWatch alarms, metrics, logging, dashboards in Ruby. Logging and runbook additions brought on-call MTTR down by reducing manual investigations.
- Authored design documents and drove team consensus on new feature design and implementation.

Lockheed Martin

2018 - 2022

Systems Software Engineer, Infrared Imaging

- Developed software simulation of a hardware-based image-processing suite, enabling validation/introduction of new system. Obsoleted need for additional in-flight testing, saving months of planning and thousands of dollars.
- Developed, released production software to test camera systems, measure performance against requirements. Resulted in complete reduction of infant mortality failure mode, and improvements in product yield by up to 52% in some runs.
- Led technical projects, 4 technicians, 2 test engineers. Communicated technical details, and defended proposals, analysis to site leadership.

AppFolio, Inc

2017 - 2018

Customer Success Manager

- Trained 100+ clients on usage of AppFolio SaaS Property Management software.

SKILLS

Languages: Python, C, C++, Java

Cloud: AWS (S3, Lambda, DynamoDB, Cloudformation), Azure

Misc: Linux (as build/dev env), Git, Docker, Kubernetes, PyTest, pandas, NumPy, Matplotlib, gdb, REST APIs

PROJECTS

Multi-threaded Distributed File System | C++14 w/ STL, gRPC, Docker, Linux, WSL2, Protocol Buffers

- Distributed multi-threaded file server/storage.
- Lists, uploads, downloads, deletes shared files across multiple clients (threads).
- Utilized gRPC/Protocol Buffers to communicate actions across clients/server.
- Implemented mutexes/other synchronization constructs for thread safety.

Classification-Based Learner for Stock Trading | Python, Pandas, NumPy, Linux

- Stock bot, advises buy/sell/short decisions.
- Trained via Classification-Based Decision Tree learner on input data set of historical price/volume data.
- Yielded 8 percent YoY positive returns after training, versus 7 percent against reference buy-and-hold strategy.