Daniel Thurau

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WORK EXPERIENCE

DFINITY - *Senior Software Engineer*   **Nov 2021 – Jan 2024**

- Lead engineer on the Service Nervous System project (SNS), a Rust based DAO platform that spawns autonomous distributed systems providing decentralized governance and tokenization of decentralized apps. In the first six months, 10 individual projects raised over 3 million ICP (~$12 million) on the platform.
- Designed and implemented the governance and swap smart contracts, a cold wallet command line tool, and the DAO spawning mechanism.
- Performed cross-team coordination, including interfacing with DFINITY's legal department, developer relations, product, security, and engineering teams. During the execution of this project I presented demos and updates to the foundation leadership and wider community.
- Maintained the Network Nervous System DAO, the DAO that governs the Internet Computer Protocol. I implemented new backend operations for our 200k users and worked with the wallet team to integrate these operations into the Svelte app.
- Worked on improving my team's devops practices which included adding logging and log collection, improving usefulness of metrics from our production systems, alerting on error detection, and pioneering runbooks for how to perform safe upgrades and release on a weekly cadence.

Amazon - *Software Developer Engineer II*   **Oct 2018 – June 2021**

- **Amazon F3:** Built Java microservices for post-order fulfillment orchestration to support grocery delivery products on Amazon.com. Improved order cancellation web services to reduce the number of stuck Amazon Fresh orders by 5%.
- **Alexa Mobile Personalization:** Created a Ranking as a Service (RaaS) web service that deployed machine learning models for content channel owners across the Alexa Mobile Org. Developed a data pipeline using AWS Kinesis Streams, AWS Lambdas, AWS DynamoDb, and AWS S3. Integrated A/B testing frameworks into the RaaS to run experiments to improve metrics such as CTR and DSI.
- **Alexa Mobile Home Channel:** Built and maintained Java REST microservices using AWS infrastructure, including a content aggregator platform for domains across Alexa. Developed a CMS for product managers to easily create and iterate static content. Created Privacy Compliance applications that satisfied GDPR, COPPA, and CCPA laws. Lead efforts in chaos and load testing backend services.

Learning & Experimental Economics Projects Lab - UC Santa Cruz - *Developer*   **Apr 2017 – Aug 2018**

- Wrote software to allow professors to simulate how players behave during open-market experiments using the Gherkin Syntax Language. The software defined player choices and transformed those choices into programmable actions in the simulated market. This allowed our team to test each software release and analyze simulated stock markets for department research projects.
- Contributed to a fork of Redwood, an open-source project for coordinating distributed players in a simulated market written in JavaScript.

TECHNICAL PROJECTS

Oldschool Runescape High Alchemy Arbitrage

- Created a Rust binary application that would alert me to arbitrage opportunities in the MMORPG Runescape. The binary used tokio, reqwest, and serde libraries to poll the official wiki's API for trade data and calculate best opportunities for my playable character to buy below-market value items on the player market and convert them to gold. Tested various strategies for identifying trades like FIFO and time-decay and measured their performance against other strategies.

ColorSplash

- Developed a web application that allows users to query and browse royalty free images that have colors within a certain Euclidean distance of a provided HEX code.
- Implemented the data processing component with AWS Lambda using python open-cv2 for image processing and NodeJS for scraping the dataset.
- Built the website's backend with API Gateway and AWS Lambda to ballpoint query a KDTree data structure. Constructed the front end with GatsbyJS and hosted via Gatsby Cloud.

EDUCATION

University of California: Santa Cruz   **Sept. 2014 - June 2018**
Bachelor of Science, Computer Science   *Santa Cruz, CA*

TECHNICAL SKILLS

Rust, Java, Python, Bash, C/C++, SQL, NoSql, Django, Jupyter Notebooks, AWS Lambda, AWS EC2, AWS DynamoDB,