Chris Ziemba

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Professional Work Experience

Amazon.com – Seattle, WA

Senior SDE (SDE III)

April 2016 – Present

- Engineering team lead for the post-purchase answering CX on Rufus. Enabling Rufus to provide high quality answering for customers including after they purchase and receive (or return) a product. Guide the team to use data available at Amazon to answer questions around orders and returns, product support, and product troubleshooting.
- Enable Retrieval Augmented Generation (RAG) using millions of PDF Manuals on Amazon. This included design and build of the end-to-end pipeline to ingest, analyze, and commit the PDF contents to storage for semantic lookup during RAG on Rufus.
- Designed, deployed, and maintained an interoperability layer across all Fire TV devices, enabling seamless integration between streaming video and the Alexa platform to deliver high-performance interactive ad overlays. Implemented scalable support for features such as Add-to-Cart, Buy-Now, and Reminders via extensible API contracts, eliminating the need for frequent app updates. Developed the core authentication and authorization codepath using signature verification, enabling secure scaling to third-party applications and services.
- Engineering team lead for design and delivery of a low-touch advertising platform on multi-modal Alexa devices that enabled high profile brands to launch with rich customer experiences, examples of noteworthy brand campaigns launched include the Barbie Movie, Trolls, Coach, Kraft, and Buick.
- Re-architected and implemented a config-backed, rule-based annotation system powered by json-logic that improved efficiency from 1% to 50%, resulting in higher throughput of human-in-the-loop evaluations which result in questions being posted that are curated based on Alexa traffic patterns.
- Built an n-gram chunking and matching technique for identifying product related questions on Alexa. Leveraged a combination of in-memory Lucene indices and finite state transducers (FSTs)

that increased our product question identification accuracy by 10%, enabling us to identify 100k+ additional product questions daily.
- Serve as a Security Certifier volunteer at Amazon, collaborating with development teams to secure Amazon software through application security review processes and ensuring adherence to security-related policies. Enabled service owners to take greater ownership of their application security throughout the product development lifecycle while reducing and mitigating security risks for customers, company, partners, and employees.

SRC Inc. – Syracuse, NY

Software Engineer

May 2014 – March 2016

- Iterate on developer tools written in Python for use in encryption and messaging with CREW Duke platform.
- Support changes to configuration tools run on Windows for SRC developed hardware, as written in C#/C++.

Other Projects

Personal Website

2023 – Present

- Maintain a personal site as a scrap space to explore ideas/tech. Hosted on AWS with CDK-defined infrastructure. Static web pages are deployed to and served from S3 and server-side rendered pages are redirected to a backend hosted via my local raspberry-pi to minimize compute cost.

Botnek – Discord Bot

2020 – Present

- Develop and maintain a discord bot that primarily provides sound effects via integration with youtube. Enables post-processing of sound effects to run on any platform that supports ffmpeg. One highlight is computation of the post-processing effect (slowdown/speedup) is never done twice using deterministic hashing for minimal latency.

Clarity for DotA – Android Application

2015 – 2016

- At the time, the game of DotA had ~6.4 quadrillion team combinations and the app provided quick insight into suggested hero selection based on current picks. Clarity was powered by a backend hosted in AWS. An automated daily refresh of statistical data was done using match history APIs and various stats and summaries were computed/stored in a postgres database and served to the app via a public REST API endpoint. The enabled purely by user donations and ad-revenue.

Education

Rochester Institute of Technology (RIT) – Rochester, NY

2009 – 2013

Bachelor's in Computer Engineering

Skills

- **Languages**
  - Most Experience: Java, TypeScript, JavaScript, Python, Bash
  - Some Experience: C++, Kotlin, Ruby, HTML/CSS, SQL, SparkSQL
  - Least Experience: C#, Go, Rust
- **AWS**: DynamoDB, S3, SQS, Elasticache (Redis), OpenSearch, ELB, Route53, ECS, SNS, CodeDeploy, StepFunctions, Lambda, Fargate, APIGateway, VPCs, RDS, CloudFormation
- **Frameworks & Libraries**: gRPC, Spring, Guice, Docker, AWS CDK, Apache Lucene, RabbitMQ, Protobuf
- **Tools**: IntelliJ, DuckDB, VIM, VSCode, Jupyter, Unix tools (git, sed, jq, awk, etc.)