

Ambrose Tuscano

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SKILLS

- **Languages & Tools:** Python, Java, TypeScript, SQL.
- **Databases:** MySQL, PostgreSQL, MongoDB, DynamoDB, RDS, RedShift, Redis.
- **Frameworks:** Guice, Dagger, Hibernate, JDBC, Mockito, Junit, Spring Boot, Vert.x, Flask, Django, FastAPI, ReactJS, TensorFlow.
- **AWS Services :** ECS, EC2, Lambda, Glue, Batch, Bedrock, Sagemaker, S3, SQS, SNS, Step Functions, Load Balancer, Athena, Quicksight, Kinesis Firehose, API Gateway, Cloudwatch, Cloudformation, IAM, Cognito, Fargate.

PROFESSIONAL EXPERIENCE

Software Engineer Amazon [Advertising]

Arlington, VA | May 2022 - Present

- **Ad Relevance API Launch & Optimization:** Led the launch, end-to-end testing, and experimentation of the Ad Relevance API for Amazon SSP, achieving over 1 million transactions per second (TPS) and a projected year-over-year (YOY) \$43 million increase in ad revenue. Identified and resolved high-impact timeout issues by optimizing infrastructure scaling policies, also enhanced alarming and monitoring, and integrated CI/CD best practices.
- **Scaling Optimization for Data Pipeline:** Engineered a significant scaling optimization for the BrandSafety data pipeline, increasing throughput by 3x (from 17 million to 52 million ASINs processed per day). This improvement drastically reduced a critical backfill process from 45 days to under 14 days.
- **Hackathon Project to Production:** Contributed to the code and infrastructure development for a winning team at an organization-wide hackathon, developing an AI-driven ad similarity system. Successfully transitioned this project into production.
- **ETL Service Revamp:** Revamped an ETL service by collaborating with PM and clients to implement new business logic based on my insights. This alignment enhanced automation, boosting Ad Trust violation detection accuracy and reducing client review time by 70%.
- **Operational Excellence & On-Call Ownership:** Successfully managed and executed multiple high-stakes campaigns under tight deadlines. Demonstrated strong ownership by resolving over 350 tickets, designed a comprehensive system monitoring dashboard, and contributed to creation of important on-call operating procedures.
- **Service Transition & Knowledge Transfer:** Orchestrated the seamless transition of a complex service comprising six distinct subsystems to another team. Led efforts in comprehensive service documentation, knowledge transfer sessions, and ongoing support, ensuring no disruption to service quality.
- **Data Pipeline Development:** Developed a reliable data pipeline for efficient retrieval and processing of creative data updates from downstream services, leveraging AWS services such as Lambda, SNS, SQS, S3 and DynamoDB to ensure seamless data flow.
- **Mentorship & Team Training:** Mentored new team members and facilitated cross-team collaboration for away team operations. Additionally, created and maintained team service docs, significantly improving team knowledge sharing and operational efficiency.

Software Engineering Intern NXP Semiconductors

San Jose, CA | May 2021 – Aug 2021

- **Test Suite Revamp & Optimization:** Revamped the test suite using Python and Keras, incorporating advanced Machine Learning techniques in NLP and Unsupervised learning. Achieved a 30% reduction in runtime and decreased manual intervention by 50%.
- **Cross-Team Collaboration:** Collaborated with multiple teams to assess software testing needs, identified opportunities for ML integration. Explored SaaS solutions and authored comprehensive documentation to support seamless adoption within the team.

EDUCATION AND HONORS

University of Maryland, Baltimore County | Master's of Science in Computer Science

December 2021

University of Mumbai | Bachelor of Engineering in Computer Science

May 2019

KEY PROJECTS

Diabetes Detection Service:

FastAPI, Twilio, PostgreSQL, Docker, AWS, Postman

- Developed FastAPI REST endpoints for Random Forest-based predictions and user management.
- Integrated Google Maps API to find nearest hospitals and added Twilio APIs for sending notifications.
- Dockerized and deployed on AWS EC2 with PostgreSQL; ensured API reliability via Postman testing.

Sports Fantasy Application:

Android Studio, Java, Python Flask, PostgreSQL

- Developed an Android app in Java for sports info and a Football Fantasy tournament.
- Built a Python web scraper to populate PostgreSQL with live game data and a Flask-based REST API to connect the database with the app, enabling real-time updates and interactive Fantasy scoring functionality.

Peer to Peer Distributed File System:

Sockets, Multi-threading, Python

- Architected a Distributed System using TCP protocol, enabling seamless File CRUD operations across multiple P2P connected nodes.
- Implemented a robust failure resilient architecture by incorporating replication strategy and employing version control techniques.

Product Validation Service:

Django, ReactJS, SQLite, Heroku

- Designed and implemented a QR code generation platform (Django, ReactJS, SQLite, Heroku) for efficient item detail sharing.
- Developed a robust API (hosted on Heroku) to manage validations, seamlessly integrating with ReactJS for an end-to-end solution.