Harrod Tang

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WORK EXPERIENCE

Nielsen

Software Engineer - Platform Tools DevOps Team   July 2022 - Present
- **Platform Tools Console** - a next-gen resource manager for Platform services
    - Led the inception and development of the application from architecture to deployment at scale.
    - Utilized by 100+ internal teams to onboard onto our Platform services.
    - Enables teams to self-manage resources, reducing the amount of support requests by 80%.
    - Ensured code stability through unit tests, achieving 80% test coverage.
    - Constructed images with Docker and deployed onto Kubernetes clusters via Helm charts for scalable deployments.
    - Developed GitLab CI/CD pipelines to automate image builds and deployments.
    - Technologies: React, Golang, Python, AWS SQS, Docker, Kubernetes, Helm, GitLab CI/CD, PostgreSQL.

- **Internal Generative AI Chatbot** - Nielsen's ChatGPT replacement for security reasons
    - Released company-wide and used by 3000 monthly users.
    - Provides employees with a generative AI application that has access to company specific knowledge, mitigating potential security risks.
    - Used by multiple teams to streamline the training process, improving onboarding efficiency by 50%.
    - Improved system reliability by creating a horizontally scalable solution that stores conversation history into an external store.
    - Implemented conversation summarization, reducing storage requirements by 50%.
    - Technologies: Python, FastAPI, LangChain, AWS (Kendra, Bedrock, DocumentDB), Google Vertex AI, TypeScript.

- **Platform's Identity and Access Management Application**
    - Abstracts and exposes Okta API operations to other Platform services as REST endpoints.
    - Automated the safe and seamless migration of 280+ Okta groups and 1000+ users from one Okta tenant to another.
    - Provides the team with full control over Okta resources, eliminating the need to submit tickets and wait for responses, saving an estimated 500+ hours annually.
    - Implemented system-wide auditing by leveraging SQLAlchemy to record all operations into a PostgreSQL table.
    - Technologies: Python, Flask, Docker, Kubernetes, Helm, GitLab CI/CD, PostgreSQL.

Software Engineer Intern - Platform Tools DevOps Team   June 2021 - August 2021
- **Cost Savings Algorithm**
    - Designed and implemented an algorithm that identifies optimal hours to scale server resources, projected to save $200,000 annually.
    - Built a React frontend to help visualize the data.
    - Integrated the algorithm into the backend Spring Boot application as a Java REST API.

- **Kubernetes Pod Restart Plugin**
    - Provides admins on other teams with the ability to restart their Apache Airflow instances themselves.
    - Leveraged Python, Flask, and HTML to build the plugin into the UI.
    - Wrote a Java REST API that deletes specified Kubernetes pods running in the Airflow cluster.

TECHNICAL SKILLS

Expertise: Cloud Computing, Full Stack Development, DevOps, Generative AI, Unit Testing
Tools: AWS, Kubernetes, Docker, GitLab CI/CD, Helm, Git, Okta, PostgreSQL, Terraform, Packer, Airflow, Spark
Languages: Python, JavaScript (React), Golang, Java

EDUCATION

University of California, Davis   Davis, California
Bachelor of Science in Computer Science (GPA: 3.768)   September 2018 – June 2022