Harrod Scott Tang

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EDUCATION

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

WORK EXPERIENCE

Nielsen
Software Engineer – Platform Tools DevOps Team   *July 2022 – Present*

- Led the end-to-end development of Platform's next-generation internal application, incorporating a robust technology stack:
    - Developed a responsive frontend in **React**, integrating libraries such as **Material-UI** for a modern user interface and **Formik with Yup** for efficient form validation.
    - Engineered the backend infrastructure with **Golang (Gin)** to robustly handle routes and optimize data processing.
    - Developed an **Okta middleware** that intercepts and verifies access tokens associated with each HTTP request.
    - **Wrote unit tests** for the backend - utilizing **testify** for assertions and **mockery** for generating mocks.
    - Created a **Python microservice** for dequeuing from **AWS SQS** and triggering **GitLab pipelines**.
    - Implemented a **CRON job** to monitor the status of GitLab pipelines and update **PostgreSQL tables** accordingly.
    - Constructed a **Dockerfile** for the frontend, ensuring production-ready image builds.
    - Designed **Helm charts**, enhancing application scalability and manageability.
    - Developed **GitLab CI/CD** files, streamlining image construction and deployment.
    - Integrated **semantic release** into the CI/CD pipeline, automating version control.

- Developed the onboarding process for one of the team's core services.
    - Crafted a multi-step onboarding form using **React**.
    - Retrieved the user's GitLab id via a call to **GitLab's API** to prepopulate one of the input fields.
    - Added an additional view to the admin panel, allowing admins to approve or edit requests related to this service.
    - Developed the corresponding **Java Spring Boot REST API** to handle the data sent from the frontend and to update the corresponding **PostgreSQL tables** accordingly.
    - Implemented an additional service in the backend that utilizes a **GitLab trigger token** to trigger the CI/CD pipeline that contains the business logic of the service.

- Contributed significantly to the development of a robust **Flask** application.
    - Integrated an **Okta middleware** to intercept and authenticate every request.
    - Developed **system-wide auditing** to meticulously track and record all operations.
    - Leveraged **SQLAlchemy** to dynamically create a dedicated auditing table upon application startup, ensuring data persistence.
    - Utilized the same library to log operation details into the **PostgreSQL table**, providing a comprehensive record of all application activities.

Software Engineering Intern – Platform Tools DevOps Team   *June 2021 – August 2021*

- Designed and implemented an algorithm that identifies optimal hours to scale server resources.
    - Integrated the algorithm into the backend **Spring Boot** application as a **Java REST API**.
    - Built a **React** frontend to help visualize the data.
    - Projected to save the team over $400,000 annually.

- Developed a plugin that allows users to restart Kubernetes pods from the Apache Airflow webpage
    - Wrote a **Java REST API** that deletes specified **Kubernetes** pods running in the **Airflow** cluster
    - Leveraged **Python**, **Flask**, and **HTML** to build the plugin into the user interface
    - Provides admins on other teams with the ability to immediately restart their Airflow instances themselves without having to contact someone on the Platform Tools Team

- Created an algorithm that determines which tables in the data lake to cache
    - Developed a **Java REST API** that utilizes a **SQL** query to return the most frequently accessed schemas in the data lake, along with the most accessed tables in each schema
    - Built an interactive **React** frontend using **Apache ECharts**
    - Resulted in faster access times to the most popular tables in the data lake

TECHNICAL SKILLS

Languages: Python, JavaScript, Java, Golang
Tools: Git, Kubernetes, Docker, GitLab CI/CD, AWS, PostgreSQL, Helm, Apache Airflow, Okta