YUTAO ZHOU

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EDUCATION

Columbia University (The Fu Foundation School Of Engineering And Applied Science): M.S. GPA: 3.8/4.0 Sep 2022 - Dec 2023
University of California - Santa Barbara: B.S. GPA: 3.7/4.0 **Dean's** Honors List in 2021 Winter. Sep 2018 - Dec 2021

SKILLS

Python, C, Java, JavaScript, HTML, CSS, Unit Tests, Spring Boot, React.JS, Django, Flask, FastAPI, MySQL, XML, neo4j, MongoDB, Solidity, Full-Stack Development, Spark, Tensorflow, Git, GCP, AWS, Airflow, D3.js, PostgreSQL, REST APIs, TypeScript, OS, Algorithm

WORK EXPERIENCE

Amazon (AWS): SDE (Software Engineer) **Sunnyvale, CA** **Feb 2024 - Current**

- Looking forward to making the world a better place together with Amazon.

Amazon (AWS): SDE Intern (Software Engineer Internship) **Santa Clara, CA** **May 2023 - Aug 2023**

- Created a Smart Reboot and Host Monitoring System that checks the status of our devices globally and reboots eligible devices with adjustable speed and settings. Redundant checks on host health(e.g. **BMC, VPC** status, etc.) and location health are performed to ensure the reboot will never influence our services and the system is distributed to **10K+ production devices**.
- Increased devices' health and reduced DevOps labor requirements. **All hosts** would be **patched** or **updated** every **14 days**.
- Completed the project entirely independently with the **entire software development cycle** from **design review**, **implementation**, **unit test**, **integration test**, **Code review**, and **monitoring pipeline** and deployment to **production**.
- Write **unit tests** using **pytest** and **unittest** framework for **Python** Packages. Write **unit test** using **jtest** for **Java** packages. Achieved total unit test coverage of more than 85% of my code in more than 5 different packages written in **Python** or **Java**.
- Find bugs from other teams and coordinate with their SDEs to fix them. Also, fulfill needs from other teams for shared packages.

Deepchem Co., Ltd: Python Intern (Software Engineer Internship) **Beijing, China** **Feb 2022 - May 2022**

- Designed and built calculation task distribution systems. Distributing calculation jobs from the distribution server to different calculation servers (Group project, 4 people in total (including one manager)).
- **Communicated** and **collaborated** with front-end, and other co-walkers to create a web-based platform. **Represented team** to communicate with manager Finished building in 1 month.
- Checked job status on the platform and handled manual stop from user with **GET**. Handling exceptional cases e.g. distribution server offline. Stress tested on all 4 calculation servers.
- Checked front-end job status and **submit log** content from calculation to the distribution server in **real-time** with **GET** and **POST**. Zip needed calculation results and uploaded files to the distribution server with POST (used for more than 10 jobs in business).
- **Increased** overall calculation **efficiency** by **50% - 200%** (Keeping calculation servers busy during nonbusiness hours).
- Created **algorithms** to **find missing tuples** in the database from ID queries CSV. **Data filtering** and **aligning**. Extract 3D Cartesian coordinates and get SMILEs with **Pybel**(OpenBabel) python package.
- **Constructed** and **maintained SQL database**. Extract data from XYZ file, CSV file, and convert SMILE and insert it into SQL database(including **checking redundant** data in database).
- Developed an **algorithm** to automatically audit two-way connections between PC and lab equipment (**Heartbeat**) with **SOCKET**.

PROJECTS

Cloud Computing Course Project: Concert Buddy **Columbia University, NYC, NY** **Sep 2023 - Dec 2023**

- Implement **microservice architecture**, each microservice is a **REST API** that supports **CRUD**.
- Utilized **Spring Boot** in **Java** to develop the Concert Microservice deployed on **Google App Engine**, integrating **PostgreSQL** hosted on **GCP Cloud SQL**.
- Integrated TicketMaster API within the Concert Microservice to synchronize and manage concert information.
- Implemented **Continuous Integration/Continuous Deployment (CI/CD)** using **GCP Cloud Build**, automating build and deployment processes triggered by new commits to the repository.
- Configured **AWS API Gateway** and **aggregator** to route requests across distinct microservices.
- Employed **AWS S3** and **CloudFront** for **Content Delivery Network (CDN)**, ensuring low-latency delivery of front-end UI websites.
- Implemented **Single Sign-On (SSO)** functionality with Google accounts to enhance the user experience.
- User microservice using **Spring Boot**, deployed on **EC2** using **Docker**, and utilized **PostgreSQL** hosted on **AWS RDS**.
- Finder microservice with **Spring Boot**, deployed on **EC2**, and employed **DynamoDB** for data storage.

Full stack Course Project: NYC Subway Traffic Analysis **Columbia University, NYC, NY** **Oct 2022 - Dec 2022**

- Full stack **RESTful** web application that displays each subway station's entry and exit data on an interactive map.
- Wrote **Frontend JavaScript, HTML, and CSS** that would let the user choose a different time with a slider. Frontend would fetch data from the **backend REST API** written with **Python Flask**. The data are processed with **Spark**.

Course Project: My Own Internet **Columbia University, NYC, NY** **Nov 2022 - Dec 2022**

- Configured **OSPF** and **iBGP** protocols to establish connectivity among 8 routers and 6 hosts within the Autonomous System.