Robert (Chen) Bao

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Education

University of Virginia, School of Engineering and Applied Science Charlottesville, VA
B.S. Computer Science, GPA: 3.76/4.0 Fall 2020 - Present
Relevant Courses: Data Structures, Algorithms, Software Testing, Engineering User Interface, Computer Architecture

Technical Skills

Programming languages: Over 10,000 lines: Python, JavaScript | Over 2,000 lines: HTML/CSS, SQL, Java, C++, Bash
Tools: React, Django, RabbitMQ, Flask, FastAPI, Postgres, SQL Server, SQLAlchemy, Material-UI, Pandas, Numpy, Docker, Linux

Work Experience

CallMiner Fort Myers, FL
Software Engineering Intern May 2022 – Aug 2022

- Built a Python microservice that extracts text sentences from customer service calls, optimizing the voice analysis pipeline that brings CallMiner millions of annual revenue
- Scaled microservice backend with RabbitMQ message queues and multi-core parallel processing, reducing average API latency from 135 ms to 20 ms
- Developed in SQL to facilitate a transition to Microsoft Azure speech recognition, measuring its impact on data quality
- Collaborated with data engineers and DevOps teams, working with Python, SQL, JavaScript, and RabbitMQ

University of Virginia, Biocomplexity Institute Charlottesville, VA
Full-stack Developer Dec 2020 – May 2021

- Collaborated with a team of 3 to develop StormShare, a web app enabling people to share resources after hurricanes, enhancing community resilience
- Engineered the System-wide Activity Dashboard, visualizing thousands of user activities in real-time on a web UI
- Developed the full stack, building 80% of the React frontend and 40% of the Python FastAPI backend
- Designed and implemented 28 unit test cases based on Base Choice Coverage, improving test coverage by 60%

Research Assistant Sep 2021 – May 2022

- Scaled a novel method to block contagions in social networks efficiently using Dominant Sets
- Built and optimized a Python program to measure similarities between sets of 8,000+ network nodes in 200 ms, measured by the Jaccard Index and the Dice coefficient

Computing for Global Challenges (C4GC) Intern June 2021 – Aug 2021

- Researched and tested a novel method to block contagions in social networks using Python

Project and Hackathon Experience

Co-Creator, GlucOverwatch | Winner of UVA's Hack4Health 2022, Best Wellness Hack Apr 2022

- Collaborated to create a Python application to monitor glucose levels of Type-1 diabetes patients, notifying patients and caregivers via text messages when needed
- Integrated the Dexcom glucose monitoring API to securely stream real-time data provided by diabetes patients
- Implemented with Python, Flask, Twilio API, and Dexcom Monitor API

Project Lead, The Pedometer Algorithm | First place (out of 30 teams) Mar 2022

- Developed a personal fitness program to count steps using iOS accelerometer sensor data from the Phyphox app
- Implemented an efficient algorithm to count steps using rolling averages, processing 2,000-line fitness data in 100 ms
- Led a team of two, building with Python, Pandas, Numpy, and Matplotlib

Creator, Code Warehouse Jan 2022

- Created a web app for software engineers/analysts to easily manage and share code snippets
- Built all React frontend components; designed the RESTful API in Django, connected to a Postgres database
- Developed with Python, JavaScript, Django, SQLAlchemy, React, Tailwind.css, Material-UI, and Postgres

Activities

Association for Computing Machinery (ACM), Yoga, Group Meditation, Hiking, Caving