

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

Aug 2020 - Present

Relevant Courses: Data Structures, Algorithms, Agile Software Development, Software Testing, Engineering User Interface

Technical Skills

Programming languages: Over 10,000 lines: Python, JavaScript | Over 2,000 lines: Java, HTML/CSS, SQL, Bash

Tools: React, Django, RabbitMQ, Flask, FastAPI, Postgres, SQL Server, Docker, Linux, Material-UI, Pandas, Numpy

Work Experience

CallMiner | *Software Engineering Intern*, Fort Myers, FL

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, and RabbitMQ

UVA Biocomplexity Institute | *Researcher*, Charlottesville, VA

Dec 2020 – Present

Full-stack Developer

- 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

- Scaled and analyzed a novel method to efficiently block contagions in social networks using Dominant Sets; the resulting paper was accepted to [the IEEE/ACM ASONAM 2022 conference](#)
- 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

CS 3250: Software Testing | *Teaching Assistant*, Charlottesville, VA

Aug 2022 – Present

- Tutoring a 140-person class on software testing principles, test-driven developments (TDD), and unit testing with Junit

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