Bozhidar K. Manev

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EDUCATION

Georgia Institute of Technology | Atlanta, GA　　　　　　　　　　　　**Aug 2019 - May 2024**

B.S. in Computer Science (Specializing in Systems/Architecture and Devices)

Relevant Courses: Adv. Computer Organization (MS), Operating Systems, Compilers and Interpreters, Data Structures, Design and Analysis of Algorithms, Processor Design, Database Systems, Computer Networking

EXPERIENCE

Backend Engineer Intern | Matrix | San Francisco, CA　　　　　　　　**May 2022 - Aug 2022**

- Developed a microservice using NestJS to enable transactions with smart contractors on the Ethereum blockchain.
- Enhanced efficiency and throughput by mitigating transaction collisions through the use of a key rotation strategy and a Redis distributed lock to sequence the utilization of private keys.
- Reduced operational expenditures through a strategic consolidation of microservices. Designed a robust database schema, implemented CRUD operations, and exposed both GraphQL and REST APIs.
- Built a CLI tool and a Retool dashboard to assist with deployments and operation of smart contracts.

Head Teaching Assistant | Georgia Tech | Atlanta, GA　　　　　　　　**Aug 2021 - May 2022**

- Tutored 400+ students across 3 sections in introductory topics of operating systems design, computer organization and networking. Conducted weekly recitations to a group of 60 students covering lecture material.
- Coordinated office hours and administrative tasks in conjunction with 20 other teaching assistants to ensure widespread availability and prompt turnaround of exams and assignments for students.
- Collaborated with faculty members to formulate the course schedule and structure.

Plus Leader and Tutor | Georgia Tech | Atlanta, GA　　　　　　　　　**Aug 2023 - Present**

- Conducting weekly recitations for an intro to AI course, presenting lecture content and answering questions.
- Facilitating individual tutoring hours for various undergraduate classes covering topics in computer organization.

LEADERSHIP

Lead Developer and Project Manager | CreateX Capstone | Georgia Tech　　**Aug 2023 - Dec 2023**

- Led a team of 5 students to develop a residential construction booking and tracking mobile app.
- Conducted 100+ customer discovery interviews, created wireframes for usability testing, and implemented the prototype using React Native. Developed dynamic forms to collect booking information and create quotes.
- Built a REST API with multi-step queries and a role-based JWT authentication using Python (FastAPI).
- Performed data modeling and optimized SQL queries, using CTE, to improve performance and reduce latency.
- Developed a recommendation engine using NumPY and a push notification system using RabbitMQ.

Co-Founder | Refigr | Bronco Venture　　　　　　　　　　　　　　　**May 2023 - Present**

- Participated in a 4 month startup accelerator and collaborated with an industrial designer to develop a product configurator enabling real-time personalization and co-design of 3D assets (furniture).
- Building a website in React to dynamically assemble configuration controls from Grasshopper definitions and display 3D objects using ThreeJS, enhanced with ecommerce functionality for a seamless shopping experience.

SOFTWARE PROJECTS

Newsletter Service

- Developed a newsletter service in Rust to gain proficiency with key crates, async execution, and best practices.
- Designed a system to stage emails and assign user groups, utilizing AWS SES for email delivery.

Embedded LoRa Network Protocol

- Built a reliable transport protocol for transmitting structured data utilizing a binary schema over LoRa radio.
- Implemented a schema exchange during the handshake, incorporated sequences numbers and retransmissions.
- Developed a home automation system allowing a central hub to automatically register and configure new devices.

Hardware Simulators

- Created a simulator for Tomasulo's out-of-order processor featuring configurable branch prediction, cache, and virtual memory. The project builds upon laboratory assignment from CS 4290: Adv. Computer Organization
- Analyzed the data collected from the simulator across various workflows to determine the optimal configurations.

TECHNICAL SKILLS

Programming Languages: Python, JS/TS, C/C++, Rust, Lua, HTML, CSS/Tailwind, SQL

Web Frameworks: FastAPI, NestJS, React, React Native/Expo, NextJS, ExpressJS, Axios

Tools: GDB, Docker, Git, Linux, Redis, PostgreSQL, GraphQL, Figma (dev mode)