Charles W. Roeder

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EDUCATION

New York Institute of Technology | New York, NY Expected Graduation, May 2024

Bachelor of Science in Computer Science, Minor in Mathematics

- GPA: 3.98
- Presidential Honor List: Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2024
- Relevant Coursework: Data Structures, Algorithms, Software Engineering, Artificial Intelligence, Database Systems, Mobile App Development, Web Development, Numerical Linear Algebra
- Red Hat SysAdmin Program: pursuing RHCSA certification via a partnership program with Red Hat

PROJECTS

SonaSense | **sona-sense.vercel.app**

- Engineered "SonaSense," a music streaming website using Next.js, React, TypeScript, and Tailwind CSS, providing a seamless user experience for music exploration and playlist management.
- Developed a unique music analysis backend in Python, integrated with an API using AWS Lambda and API Gateway, enabling real-time key and BPM determination of uploaded songs for enhanced search and discovery features.
- Implemented Supabase for user authentication and data storage, backed by a PostgreSQL database, ensuring reliable and secure user interactions.
- Featured a sophisticated search functionality allowing users to filter songs based on key and BPM, enhancing the music discovery experience.

AgendaMaster | **agenda-master-psi.vercel.app**

- Developed "Agenda Master," a comprehensive task management and college application planning tool built with Next.js, React, TypeScript and Tailwind CSS.
- Leveraged MongoDB for efficient data and account storage, providing robust and scalable database management.
- Integrated the ChatGPT API to enable automatic generation and management of college application tasks for high school seniors, featuring an interactive timeline for efficient tracking and deadline visualization.
- Utilized NextAuth with bcrypt for user authentication and middleware, ensuring secure access and data protection.

Environmental Insights with Federated Learning & Blockchain

- Orchestrated a federated learning system using PyTorch and a Raspberry Pi network for real-time analysis of environmental data, showcasing advanced skills in IoT and edge computing.
- Implemented a secure, private blockchain network using Hyperledger Fabric for trust value management, significantly enhancing data integrity and accuracy in machine learning models.

WORK EXPERIENCE

FOUND Study New York, NY
Resident Assistant *August 2023 - Present*

- Provide guidance and supervision to over 1000 residents via mediating interpersonal conflicts, aiding in maintenance troubleshooting by directing to the appropriate resources, and fostering community engagement through the organization of residence life events.
- Assist with the maintenance of building operations for the 525 Lexington Ave property by collaborating with building managers and community managers

Butterfield Market New York, NY
Team Member – Grocery, Cashier & Prepared Foods *October 2022 - Present*

- Utilize strong communication and interpersonal skills to collaborate with team members and provide exceptional service, resulting in high levels of customer retention and loyalty.
- Demonstrate ability to work effectively in a fast-paced environment and handle multiple tasks simultaneously.
- Boost team efficiency and productivity by proactively identifying opportunities to improve processes and procedures.

SKILLS

Programming: JavaScript, Python, Java, TypeScript, Dart, HTML, CSS, SQL, MatLab
Tools: React, Next.js, React Native, Flutter, MongoDB, AWS Lambda, AWS API Gateway, Supabase, TailwindCSS, Expo, Pandas, Pytorch, Hyperledger Fabric, Scikit-learn, Seaborn, MySQL, PostgreSQL, Git, GitHub, Webpack, SSH
Platforms: Linux (Arch, Red Hat, Ubuntu), Windows 11