Rogeh Beshay

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Education

University of Florida Expected May 2027

Bachelor of Science in Computer Science (GPA: 3.9 / 4.0) *Gainesville, Fl*

- **Relevant Coursework:** Data Structures and Algorithms (C++), Prog Fundamentals 1 (Python), Prog Fundamentals 2 (C++), Linear Algebra w/Computational Applications, Intro Software Engineering

Experience

Clubfinity, UFSEC Jan 2024 – Present

Software Engineer Tech Officer *Gainesville, Fl*

- Designed and launched 'Clubfinity,' a mobile platform connecting over 2,500 students with campus organizations, by addressing the issue that over 60% of students were unaware of campus events. Drove development of the app using React Native and Expo, boosting student engagement by 75% and event attendance by 40%.
- Spearheaded backend collaborations with team members to utilize Node.js and Express.js for designing and implementing efficient RESTful APIs, and integrating MongoDB for scalable data storage. Achieved a 50% reduction in server response times and supported over 5,000 concurrent users.
- Led a team to implement WebSockets and ngrok for secure, real-time communication between the React Native frontend and Node.js backend. Reduced data latency by 70%, and increased user retention by 30%.

Diffusion MRI Image Segmentation Sep 2024 – Present

Research Assistant *Gainesville, FL*

- Worked with others to create an AI model using UNET architecture in Python and PyTorch to segment anatomical regions from Diffusion MRI brain images of Parkinson's patients, achieving 92% accuracy on 300 brain scans.
- Optimized model performance with data augmentation, hyperparameter tuning using Adam Optimizer, and cross-validation, utilizing Convolutional Layers, and NumPy. Evaluated using IOU and Dice Similarity Coefficient, increasing segmentation accuracy by 15% over baseline and outperforming Segment Anything v2 by 10%.
- Utilized UF's High-Performance Computing Facility (HiPerGator) and collaborated with team members to process large-scale medical image data, using pydicom for handling DICOM images. Reduced training time by 50% and enabled effective handling of extensive datasets.

Projects

Cloudify - File Storage System | *React.js, Tailwind CSS, Node.js, Express.js, MongoDB, Amazon S3*

- Engineered 'Cloudify,' a secure file storage platform to address the need for scalable, real-time collaboration, utilizing React.js, Redux, Tailwind CSS, Node.js, and Express.js—boosting user productivity by 35%.
- Cultivated advanced security protocols by implementing JWT authentication and password protection, tackling data privacy concerns—strengthening security protocols by reducing unauthorized access by 40% and enhancing user data protection.
- Revamped cloud storage with Amazon S3 and MongoDB, handling large files efficiently through RESTful APIs and scalable architecture—improved system performance by 50%.

Financial Data Analyzer | *C++, React.js, WebAssembly, Emscripten, Tailwind CSS*

- Developed a high-performance financial data analysis tool using Fenwick and Segment Trees in C++, implementing advanced indicators (Aroon, EMA, Kurtosis) with O(log n) time complexity for most operations.
- Orchestrated the design and development of a full-stack solution featuring a React-based web UI integrated with a C++ backend (compiled to WebAssembly), utilizing the Alpha Vantage API for real-time stock data retrieval and visualization.

Minesweeper | *C++, SFML*

- Programmed and built a fully functional Minesweeper game in C++, leveraging the SFML library for graphics rendering and event handling, demonstrating proficiency in object-oriented programming and game logic implementation.
- Implemented key features including randomized mine placement, recursive cell revealing, and a custom GUI.

Technical Skills

Languages: C++, Python, JavaScript, HTML, CSS
Technologies: SFML, WebAssembly, React.js, Node.js, MongoDB, AWS, Socket.io, Redis, PyGame, Git, GitHub