Jonathan Shields

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EDUCATION: Aug 2020 - May 2024

York College, City University of New York (CUNY), Queens, NY
Bachelor of Science in Computer Science

SKILLS

Programming Languages: Python, C++, Rust, SQL, HTML, CSS, Bash, JavaScript
Technologies: Vim, Linux, Git/Github,

PROJECTS

Decentrailzed Node Aug 2024 - *Current*

- Developed a decentralized node system hosting lightweight Feed-Forward Neural Networks for sentiment analysis
- Implemented multiple APIs and communication protocols (TCP/HTTP) to enable seamless node interaction
- Perform peer to peer fine tuning of models via homomophic encryption to preserve privacy of model weights while fine tuning models on data hosted on other servers
- Deployed distributed nodes across heterogeneous servers using Docker containerization

Fraud Detection Model , [Repository] *Oct 2023 - Dec 2023*

- Developed and implemented a Neural Network model for fraud detection using Python, achieving 95% accuracy on test datasets
- Utilized TensorFlow and Scikit-learn libraries to build, train, and optimize machine learning algorithms for transaction analysis
- Created data visualizations with Seaborn, effectively communicating insights to stakeholders
- Deployed a user-friendly web application using Streamlit, increasing project visibility and user engagement by 50%

CSV Editor, [Repository] *April 2023*

- Developed a robust Bash script for efficient CSV file manipulation, implementing full CRUD (Create, Read, Update, Delete) functionality
- Engineered I/O stream integration to ensure seamless data exchange and interoperability with various software ecosystems
- Implemented error handling and input validation to enhance script reliability and user experience
- Utilized advanced Bash scripting techniques including file operations, loop structures, and command substitution
- Demonstrated proficiency in Unix/Linux environments and command-line interfaces

Task Management System, [Repository] *Nov 2022 - Dec 2022*

- Developed a robust task management application using C++ and object-oriented programming principles
- Developed sorting algorithms and reverse functions to enhance list management capabilities
- Engineered a user-friendly command-line interface with multi-level menus for intuitive navigation
- Implemented error handling and input validation to ensure application stability

RELEVANT EXPERIENCE

Modelex *Aug 2024 - Current*

Software Developer

- Created a dashboard for monitoring blockchain nodes, improving network visibility and management
- Developed a program for secure signing and deployment of smart contracts on Ethereum, ensuring maximum security protocols throughout the transaction process.
- Implementing CI/CD pipelines to streamline our development and release processes.

Lendvest *Mar 2024 - Aug 2024*
Software Developer

- Member of a four-person team for the NYC Node project, a government-sponsored initiative facilitating open access to blockchain data from the Ethereum blockchain for both private sectors and research purposes.
- Currently contributing to development of new methodologies of performing financial analysis within cryptocurrency markets by incorporating vector operations on blockchain data.
- Worked with a team to develop FAISS-IVF indexes using Llama Index by creating embeddings for efficient vector-based search.
- Project is set for co-development with IBM with the goal of listing an enterprise grade application on IBM's marketplace.

Runwei™ | AI & ML for Financial Inclusion and Economic Mobility *J* *an 2024 - April 2024*
Software Developer

- Engineered a robust web scraper as part of a four-person development team, focusing on data collection for small business resources
- Implemented advanced web scraping techniques using Python libraries including Beautiful Soup and Scrapy
- Contributed to the creation of a recommendation system for small businesses, enhancing financial inclusion and economic mobility
- Optimized scraper performance and data processing efficiency, resulting in a 30% reduction in data collection time

CUNY Tech Prep
Data Science Fellow *Jul 2023 - Aug 2024*

- Selected for a competitive data science fellowship with students from the 11 CUNY senior colleges where Fellows create technical projects using tools such as Python 3, Jupyter Notebooks, Pandas, Numpy, Scikit-learn, and SQL
- Participate in weekly courses and learn industry best practices for exploratory data analysis (EDA), feature engineering, data collection and processing, statistical modeling, data visualization, machine learning techniques, data science process, and big data

City University of New York (CUNY)
CUNY Tutor *Jan 2023 - Aug 2024*

- Design and implement curriculum for HTML, CSS, and Bash programming courses tailored to middle and high school students
- Utilize various teaching methodologies to accommodate diverse learning styles and skill levels
- Collaborate with other tutors and faculty to share best practices and maintain consistent educational standards
- Maintain up-to-date knowledge of web development trends and programming best practices to ensure relevant instruction

SUPPORTING EXPERIENCE

Undergraduate Computer Science Researcher (paper) *Jun 2020 - Jun 2024*

- Conducted extensive research on optimizing recursive algorithms in graph and tree data structures
- Presented research findings through poster and oral presentations at the American Association for the Advancement of Science (AAAS) conference
- Collaborated with faculty advisor Dr. Thitima Srivatanakul on research methodology and paper writing
- Gained hands-on experience with data structures, algorithmic analysis, and scientific writing

ASSOCIATIONS

Scholar, **National Science Foundation (NSF) in Science, Technology, Engineering, and Mathematics Program (S-STEM)**
Member, **Black Male Initiative**