Tuneer Roy

Philadelphia, PA • tuneer@seas.upenn.edu • tuneer-roy.com • github.com/tuneerroy

EDUCATION

University of Pennsylvania, School of Engineering & Applied Science – Philadelphia, PA   May 2024
BSE in Computer Science • Minor: Engineering Entrepreneurship • GPA: 4.0/4.0

Montgomery Bell Academy – Nashville, TN   May 2021
GPA: 4.0/4.0 • ACT: 36/36 • Captain of Robotics & Mock Trial Teams • National Merit Scholar • Eagle Scout

TECHNICAL SKILLS

C++, Java, Python (Flask, Django, Pandas, NumPy, FastAPI, Matplotlib, PyTorch), JavaScript (TypeScript, React, Express), Git, Haskell, C, REST, Kubernetes, Docker, SQL, MongoDB, Redis, AWS (EC2, S3, ELB), Apache Spark

RELEVANT EXPERIENCE

Penn Labs | Team Lead, Backend Developer | Philadelphia, PA   February 2022 – Present
- Lead teams of Penn Mobile and upcoming product Portal for 10k+ active student users.
- Developing Django REST backend and data architecture while regularly consulting with iOS and Android teams.
- Spearheaded notification system that permits other products to use app for notifications (ex: alert users when course opens) with optional delays (using Celery); Also set up Redis caching to boost API request performance.

Martian | Full-Stack Developer | Virtual   October 2022 – Present
- Refactored user interface to speed up page performance; Created new full-stack features using React & Express.
- Planned and executed LTI integration of platform to fully integrate Martian's products with other EdTech tools.

University of Pennsylvania | Teaching Assistant | Philadelphia, PA   September 2022 – December 2022
- Held office hours, answered online questions, graded assignments, and proctored exams for CIS 2620: rigorous proof-based course exploring automata theory, Turing machines, undecidability, and NP-completeness.

University of Pennsylvania | Research Assistant | Philadelphia, PA   May 2022 – August 2022
- Analyzed and compartmentalized data from the Ethereum blockchain using SQL queries and Python scripts.
- Developed dashboard using TypeScript, React, Express, and MongoDB to automate fuzzing programs on recently created smart contracts on the Ethereum blockchain; Expedited team's analysis of smart contracts by over 75%.

OTHER PROJECTS

Forecasting Stock Prices | *Python, Machine Learning*   February 2023 – Present
- Collecting and wrangling stock data; Predicting future prices using convolutional neural networks and long short-term memory networks; Comparing results with predictions from ensembles and k-nearest neighbors.

Shell | *C, Linux*   February 2023
- Designed and built simplified version of Bash using only Linux system calls.
- Supports foreground and background processes, standard input and output redirections, multi-process pipelines, and job control; Handles completed background processes asynchronously through interrupts and signal handling.

Esoteric Language Compiler | *Haskell, ARM Assembly*   November 2022 – December 2022
- Designed generic abstract language syntax to be compiled directly into ARM assembly.
- Built parsers for two separate esoteric languages to be translated into internal representation of logic.
- Ensured correctness by writing corresponding interpreters and using property-based testing with QuickCheck.

Minesweeper | *C++*   October 2022
- Wrote popular 1989 puzzle game with added feature of saving/loading past games.

Stormlight WikiBot | *Java, Web Scraping*   April 2022
- Wrote a crawler that traversed all the web pages in the Stormlight Archives fandom.
- Designed user interface that displayed graph of shortest path between any two Stormlight webpages provided.