Tuneer Roy

tuneer@seas.upenn.edu • tuneer-roy.com • github.com/tuneerroy • US Citizen

EDUCATION

University of Pennsylvania, School of Engineering & Applied Science – Philadelphia, PA   May 2025
Master of Science (MSE) & Bachelor of Science (BSE) in Computer Science • GPA: 4.0/4.0

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

University of Pennsylvania | Instructor | Philadelphia, PA   Beginning in August 2023
- Develop curriculum, grade assignments, and deliver weekly lectures for course CIS 1962 – JavaScript
- Previously served as teaching assistant for CIS 2620: Automata, Computability, & Complexity (130+ students)

Martian | Software Engineering Intern | San Francisco, CA   October 2022 – Present
- Designed full-stack features with React & Express for EdTech tool, improving website speed by over 150%
- Hacked together entire backend in FastAPI & MongoDB for core product in single weekend (+4198/-1289 lines)
- Develop LLM models using Transformers architecture for tasks such as PII redaction and code generation
- Wrote Python and Node.js packages for core product to enable easy integration with existing codebases

Penn Labs | Team Lead, Backend Developer | Philadelphia, PA   February 2022 – Present
- Lead teams for Penn Mobile and Portal, catering to over 10,000+ active student users
- Design and develop Django REST backend and data architecture in collaboration with iOS/Android teams
- Built notification system for Penn Labs products to send alerts to the app (with optional delays using Celery)
- Manage team developing analytics engine in C++ to process and analyze data usage across all products

University of Pennsylvania | Research Assistant | Philadelphia, PA   May 2022 – August 2022
- Analyzed and organized Ethereum blockchain data using SQL queries and Python scripts
- Developed a dashboard with TypeScript, React, Express, and MongoDB to automate fuzzing programs on new smart contracts on the Ethereum blockchain, resulting in 75% reduction in analysis time for research team

Steppingstone Scholars Inc. | AP Computer Science A Instructor | Philadelphia, PA   October 2021 – May 2022
- Delivered bi-weekly lectures on high-level programming concepts and practices using Java

PROJECTS

GPT Code Critic | *Docker, Kubernetes, GitHub Actions*   April 2023 – May 2023
- Deployed Docker and Kubernetes-based application utilizing GPT-3.5 for code analysis

PennOS | *C, Linux, Operating Systems*   February 2023 – April 2023
- Implemented a priority scheduler for UNIX-like operating system using ucontext library
- Supported foreground & background processes, stdin & stdout redirections, signal handling, and more

Forecasting Stock Prices | *Python, Machine Learning*   February 2023 – April 2023
- Developed an ensemble model combining ARIMA & Transformer architectures for predicting future stock prices
- Achieved average MSE of $2.63 per stock (where prices were in the thousands) and R^2 of 0.94

Book Nexus | *React, Express, MySQL, MongoDB, GitHub Actions* | Link   February 2023 – April 2023
- Wrote complex SQL queries to generate book & author recommendations based on users' favorites & preferences
- Created streamlined CI/CD pipeline that automatically deployed app whenever repository was updated

Esoteric Language Compiler | *Haskell, ARM Assembly* | Link   November 2022 – December 2022
- Invented 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