Philip Wisniewski

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Education

Purdue University — West Lafayette, IN
Bachelor of Science in Computer Science — *Aug. 2023 – May 2027*
GPA: 4.00 — Dean's List and Semester Honors all semesters

Experience

Research Intern — May 2024 – Present
Rosen Center for Advanced Computing — *West Lafayette, IN*

- Researched and developed a queue time prediction model using historical data from the SLURM workload manager on the ANVIL supercomputing cluster
- Trained a densely connected feedforward neural network with PyTorch, integrating it into a command line tool for enhanced operational efficiency
- Utilized Python, PyTorch, PostgreSQL, and SLURM to investigate, store, and calculate trends in data

Research Intern — June 2022 – Aug. 2023
Mayo Clinic — *Rochester, MN*

- Researched and predicted cancer cell line drug resistance utilizing artificial intelligence from various genetic data
- Investigated effects of specific omic data and pathway expressions on modeling
- Presented findings at two poster conferences (Explore the Exposome: Individualizing Medicine Conference and Mayo Clinic SURF Symposium)
- Utilized Python, R, TensorFlow, and Scikit-Learn for model creation and analysis

Highlighted Publication

A Hierarchical Deep Learning Approach for Predicting Job Queue Times in HPC Systems

- *Supercomputing '24 (HUST-24)* – 11th International Workshop on HPC User Support Tools
- Lovell A[*], **Wisniewski P[*]**, Rodenbeck S, Ashish ([*]Designates co-first authorship)

Highlighted Projects

Stock Market Analysis (In Progress) | *Python, FastAPI, Uvicorn, PySpark, yFinance, PyTorch, JS/CSS/HTML*

- Developing a full-stack web application to visualize financial trends and predict stock prices using transformer-based models
- Integrated yFinance and PySpark to collect and process large-scale historical stock data efficiently
- Built a FastAPI backend with Uvicorn for high-performance async communication with a dynamic JavaScript frontend
- Currently implementing a custom transformer model using PyTorch for stock price prediction

CHIP-8 Emulator | *C++, SDL2*

- Built a fully functional CHIP-8 emulator from scratch, capable of running classic ROMs like Pong and Breakout
- Implemented core components including memory, stack, timers, input handling, and opcode decoding
- Used SDL2 to simulate a 64x32 monochrome display and handle keyboard input for cross-platform support

Technical Skills

Languages: Python, C, C++, C#, Java, SQL (Postgres), R
Developer Tools: Git, Docker, Rancher, VS Code, Visual Studio, PyCharm, IntelliJ, Spyder, Lex, Yacc, Unity, SLURM
Libraries: Pandas, NumPy, Matplotlib, PyTorch, TensorFlow, Scikit-Learn