Philip Yi

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EDUCATION

Duke University **August 2022 - May 2026**
B.S. Computer Science & Mathematics *GPA 3.98 / 4.0*
Relevant Courses: Computer Algorithms, Numerical Analysis, Probability, Database Systems, Computer Architecture

SKILLS

Languages: Python, Java, SQL, JavaScript, C, C++, C#, MatLab, Assembly (MIPS), Golang
Frameworks: PostgreSQL, FastAPI, Node.JS, React.JS, MongoDB, PyTorch, SciKit Learn, LangChain, WebGL, Mujoco
Tools & Libraries: AWS, Snowflake, Seaborn, Plotly, TensorFlow, BeautifulSoup, Pandas, Numpy, Plotly, Selenium

PROFESSIONAL EXPERIENCE

IMC Trading
Incoming Software Engineering Intern

DraftKings Inc. | C#, Quartz, AWS, Snowflake, SQL May 2024 - August 2024
Software Engineering Intern *Boston, MA*

- Created the first data pipelines to provide NCAA Women's basketball data to AWS S3 and Snowflake
- Refactored Snowflake SQL aggregation tasks and implemented query optimization for speed up by **75%**
- Used Quartz to automate download schedules for over **1000**+ games of NCAA basketball data
- Implemented asynchronous functions and Brotli Compression to improve API response time by **137%**

Caterpillar Inc. | Python, Sk-Learn, PyTorch, Seaborn, Plotly, Pandas May 2023 - May 2024
Software Engineering Intern *Chicago, IL*

- Created XGBoost decision tree with Sk-Learn to predict 120 vessels' fuel consumption with **97%** accuracy
- Used models to detect over **300** fuel anomalies and help generate over **$2 million** through aftermarket care
- Developed Python ML package to multithread data preprocessing, build models, and visualize data with Seaborn

Duke University School of Mathematics | Numerical Analysis, C#, Linear Algebra August 2023 - May 2024
Research Intern *Durham, NC*

- Studied the repeated digit sums problem in graph theory and generalized solutions for star and complete graphs
- Formulated iterative methods for finding solutions to general graphs and visualized valid graph labelings in C#

STUDENT ORGANIZATIONS & PROJECTS

Database Undergraduate TA | C++, SQL, MongoDB, PostgreSQL August 2024 - Present
Teaching Assistant *Durham, NC*

- Taught database systems concepts to undergraduate students from ER Diagrams to Transaction Processing
- Built a relational database from scratch using C++ that stores and retrieves persistent data from disk
- Developed custom REPL, SQL Compiler, Index using B+ Trees, and Transaction Processing

Duke Robotics Team | C++, Onshape, Python August 2022 - Present
Vice President and Software Head *Durham, NC*

- Increased autonomous score by **150%** through VSLAM and Kalman Filter to optimize localization accuracy
- Managed **30** students and developed both software and mechanical design tutorials to onboard new members
- Qualified for 2024 **World Championship** by achieving top scores in programming and robot skills score

Duke Matching App | Python, PostgreSQL, FastAPI, Next.JS, Tailwind, SQL August 2023 - January 2024
Full Stack Developer *Durham, NC*

- Created AI dating advisor and used LangChain with a vector database to offer advice to over **300 users**
- Implemented real-time chat using WebSockets, O-Authentication to login and access Spotify API user data, AWS S3 Bucket for image storing, and K-NN model for matching users to each other

Mujoco Reinforcement Learning | Python, Mujoco, PyTorch, Gymnasium July 2024 - August 2024
Full Stack Developer *Durham, NC*

- Built and trained PPO policy, a RL algorithm, for Mujoco humanoid model to stand up and walk on its own
- Created logs and linked Tensorboard to the project to monitor model losses and rewards over training iterations
- Fine tuned PPO policy using learning rate annealing, entropy regularization, and gradient clipping