William Qi

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EDUCATION

University of Pennsylvania   May 2025
B.S.E. in Electrical Engineering | M.S.E. in Data Science | Minor in Computer Science   *Philadelphia, PA*
GPA: 3.98/4.0
Relevant Coursework: Machine Learning, Databases, Deep Learning, Big Data Analytics, Data Structures and Algorithms, Statistics for Data Science, Digital Signal Processing, Analog Integrated Circuits, Semiconductor Physics, Linear Algebra, Probability, Discrete Mathematics

EXPERIENCE

Bentley Systems   May 2023 – August 2023
Software Engineering Intern   *Exton, PA*
- Collaborated on the iTwin Platform's API Management team to maintain and update the developer portal, providing customers access to APIs and services to build digital twin applications
- Implemented functionality in the backend infrastructure to address issues where user information was not being updated in the database after users made changes in user management profile
- Resolved authentication bug by converting 500 errors to the appropriate 401 responses when a basic token was used for bearer authentication instead of bearer token

Fang-Yen Laboratory, University of Pennsylvania   June 2022 – September 2022
Undergraduate Researcher   *Philadelphia, PA*
- Developed programs to analyze the properties of traces and frequency spectra of sound and vibrations generated by the violin bow when drawn against the string
- Designed and constructed a device using aluminum extrusions to systematically apply force on violin bow hair to simulate hand-tapping
- Modified CNC machine to modulate different properties of the bow while being drawn against the string

NOBO Robotics   November 2021 – May 2022
Software and Hardware Engineer   *Philadelphia, PA*
- Developed modular agricultural autonomous robots to control birds and other pests using non-lethal methods
- Built a prototypical robot to patrol vineyards and farms using computer vision and GPS
- Designed a printed circuit board as a part of an attachable device that emits loud sounds to mimic predatory birds

Lavner Education   June 2021 – August 2021
IT Intern   *Merion Station, PA*
- Provided troubleshooting and technical support to students and completed project backup and computer clean-up
- Taught 50+ campers coding skills (Java, Scratch, LUA) and sports analytics
- Set up and maintained on-site computer hardware, software, and internet connectivity

PROJECTS

Bottleneck Transformer | *Python, PyTorch*
- Implemented the cutting-edge model architecture, BoTNet, introduced in the research paper "Bottleneck Transformers for Visual Recognition" by Srinivas et al., repurposing it for image classification
- Tuned hyperparameters such as learning rate, weight decay, and momentum, and trained the Bottleneck Transformer model on the CIFAR-10 dataset, achieving 90% accuracy on test data

NBA Draft Picker | *Java, jsoup*
- Gathered and analyzed data on NBA Hall-of-Fame inductees and leading college basketball players from each team for a specific year, utilizing HTML parsing for web scraping
- Developed a recommendation system for draft picks from user-selected draft classes, identifying candidates most similar to the average NBA Hall-of-Famer profile using cosine similarity

SKILLS

Programming Languages: Java, Python, SQL, JavaScript, Typescript, C#, OCaml, MATLAB
Machine Learning & Data Science: PyTorch, Numpy, Pandas, Matplotlib, Scikit-Learn, Spark
Other: React, HTML/CSS, .NET, Node.js, Git, JUnit, Jest