Benjamin Wu

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EDUCATION

Columbia University – Nikola Tesla Scholar *New York, NY*
M.S. Electrical Engineering, GPA 3.54/4.0 Aug 2022 – Dec 2023
Courses: Evolutionary Computation, Computational Neuroscience, Advanced Theoretical Neuroscience

Stony Brook University – Presidential Scholar *Stony Brook, NY*
B.Sc. Applied Mathematics and Statistics, GPA 3.77/4.0 Aug 2018 – May 2022
Courses: Numerical Analysis, Artificial Intelligence, Honors Computer Science, Analysis of Algorithms
Honors Thesis: Transfer Learning for EEG Signal Classification using 3D Neural Networks

EXPERIENCE

Air Force Research Lab *Eglin, FL*
AFRL Scholar May 2021 – Present
- Lead team project starting from ideation to proposal drafting, to implementation
- Expanded connectome-constrained convolutional neural network to predict optic flow on color video
- Simulated pattern recognition on neuromorphic optoelectronic sensor using custom neural network
- Programmed deep neural networks for multi-object video tracking
- Presented technical briefings to program director and multiple department heads

Institute for Advanced Computational Science *Stony Brook, NY*
Student Researcher Mar 2020 – May 2022
- Simulated device computations on supercomputing cluster, parallelized code for over 20× speedup
- Programmed quantum random walk linear solver (QRWLS) from scratch using Python, qiskit
- Analyzed effect of matrix sparsity on QRWLS performance under noisy IBM-Q device conditions

Northrop Grumman *Manhattan Beach, CA*
Microelectronics Foundry Support Intern May – Jul 2021
- Created tool for organizing and graphing circuit test data, reduced time from hours to seconds
- Queried database using SQL and Python pandas to trace missing wafer counts
- Tested technician workflow management web client, communicated errors to external vendor

Microelectronics Wafer Level Packaging Intern Jun – Aug 2020
- Designed database and data collection procedures for airtightness tests, merged with legacy systems
- Analyzed correlation between circuit hermeticity and wafer position
- Programmed script to maximize circuit yield via discrete wafer placement optimization

Enlighting Corp. Princeton, NJ
Software Developer Jun – Aug 2018
- Built data-processing system from scratch with self-taught HTTP requests, Apps Script, JavaScript
- Proposed and designed new front-end for user intuitiveness

TECHNICAL SKILLS

Data analysis and visualization (Pandas, pyodbc, PySQL, Matplotlib SQL, R)
Scientific programming (Python, NumPy, SciPy, MATLAB, C++, Linux command line)
Artificial neural networks, machine learning (PyTorch, TensorFlow, scikit-learn)