Danny Xu

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Education

University of Wisconsin, Madison — Madison, WI
Bachelor of Science in Computer Science, Mathematics — *Sep. 2023 - May 2025*
- **Awards**: Undergraduate Research Scholar

University of Minnesota, Twin Cities — Minneapolis, MN
Transferred Institutions, Honors Computer Science, (GPA: 3.96/4.00) — *Sep. 2022 - May 2023*
- **Awards**: Dean's List (2x), Presidential Scholar
- **Leadership**: App Developer Club Executive Officer, Science and Engineering Student Board Sub-Director

Technical Skills

Languages & Tools: TypeScript, Java, C#, Python, SQL, HTML/CSS, Swift, Azure DevOps, Power BI, Unix
Frameworks: React JS, Next JS, Node JS, ASP.NET MVC, EF Core, SwiftUI
Libraries: Pandas, NumPy, Matplotlib, TensorFlow, Scikit-learn, ChakraUI, TanStack Query, HighChartsJS
Certificates: Supervised Machine Learning (Stanford), Programming Fundamentals (Duke)
Coursework: Algorithms and Data Structures, Machine Architecture

Experience

CommScope - Fiber Optic Test Lab — Shakopee, MN
Software Engineer — *Aug. 2023 - Present*
- Continuing the development and expansion of lab testing web infrastructure initiated during my internship, focusing on global deployment and efficiency improvements in CommScope research/test labs
- Achieved a **20% speed increase** in build and deployment processes by converting Azure DevOps CI/CD pipelines to YAML, enabling specific optimizations through parallelism, caching, and removing redundant code
- Engineered a dynamic Power BI dashboard for lab technicians, leading to data-driven insights

Software Engineer Intern — *May 2023 - Aug. 2023*
- Engineered a web app for lab testing data retrieval and analysis, successfully pitching the project to the VP
- Boosted testing efficiency by **80%** by leveraging React, Next.Js, and ChakraUI on the frontend
- Generated annual time savings of **600+ hours** by restructuring the test result storage system, leveraging Entity Framework Core, RESTful APIs, and SQL Server on the ASP.NET MVC backend
- Achieved a **400% speed increase** compared to the existing solution by optimizing code through multi-core parallelization and micro-optimization, leveraging concurrency for faster data load times

University of Minnesota - Aerospace Department — Minneapolis, MN
Undergraduate Research Assistant — *Nov. 2022 - May 2023*
- Engaged in a U.S. Air Force-sponsored project at the University of Minnesota Small Satellite Research Lab, focusing on the development of CubeSats for the EXACT & IMPRESS missions, set to launch in 2024
- Strengthened low-level C++ communications protocols between the ground station and small cube satellites
- Conducted unit testing in Python to ensure accurate and efficient data transmission

Projects

LeetCode Problem Tracker | *TypeScript, Node.js, MongoDB, React.js, ChakraUI, Next.js*
- Develop a **full stack** React web app (bootstrapped with Next.js) to create personalized LeetCode study plans
- Integrate the **SM-2 algorithm** to dynamically tailor problem difficulty to individual user performance
- Leveraged Puppeteer for efficient web scraping, extracting problem details like titles, links, and topics
- Designed and executed MongoDB schemas/models, ensuring seamless data management to store user progress

Breast Cancer Detector | *Python, TensorFlow, Scikit-Learn*
- Developed a **breast cancer detection model** using logistic regression, achieving an accuracy of **83%**
- Utilized OpenCV for image preprocessing, leveraging resizing, grayscale conversion, and normalization for training
- Performed hyperparameter tuning using GridSearchCV to optimize the logistic regression model parameters, enhancing predictive performance, and employed Scikit-Learn for splitting data into training and test sets, and for standardizing the features using StandardScaler, contributing to the model's robustness

Cash Register Counter | *Swift, SwiftUI, Testflight*
- Built an **iOS application** to expedite the counting of cash-registers, leveraging Swift and SwiftUI
- Amassed **20,000+** impressions by building, iterating, and publishing the app on the Apple App Store
- Implemented MVVM Architecture to organize code development and improve code maintainability