Norris Chen

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Education

University of Pennsylvania | *Cumilative GPA: 3.76* — Philadelphia, PA
Masters in Computer Information Technology, Masters in Materials Science and Engineering — *Sep. 2021 – Dec. 2023*

University of California, Los Angeles — Los Angeles, CA
Bachelor's in Materials Science and Engineering — *Aug. 2016 – May 2020*

Work Experience

Full Stack Software Engineer Intern | *Pandas, Flask, React* — Jun. 2023 – Present
Wharton Healthcare Analytics — *Philadelphia, PA*

- Innovated and implemented a decision-aware machine learning algorithm to optimize resource allocation within healthcare supply chains
- Created a user-friendly full-stack website with Auth0 authentication to enhance the user interface and user experience (UI/UX), facilitating accessibility for the government of Sierra Leone
- Utilized the DHIS2 API and implemented web scraping scripts to gather essential data required for decision-aware learning, ensuring accurate and up-to-date information for allocation decisions
- Collaborated closely with the Sierra Leone government to deploy and oversee the allocation of critical medical supplies resulting in a 18% improvement to allocation accuracy

Robotics Graduate Research Assistant | *Matlab, SolidWorks, Arduino, Linux* — Mar. 2022 – Mar. 2023
General Robotics, Automation, Sensing, and Perception Lab - IceBot — *Philadelphia, PA*

- Developed the integration of Matlab Computer Vision Toolbox to meticulously track fatigue-induced cracks on modular robotic arms, enabling a comprehensive assessment of their structural robustness
- Seamlessly utilized the Linux shell to rigorously adhere to a EtherNet/IP Protocol, enabling precise control of modular robots constructed from ice, resulting in a remarkable 30% reduction in overall robot production costs
- Visualized and analyzed fatigue data to modify the geometric parameters of the robotic arm, resulting in a 13% increase in mechanical strength

Projects

MCIT Connect | *PostgreSQL, NodeJS, Figma, React, Classification, t-SNE, PCA* — Mar. 2023 - Present
MCIT Student Board - University of Pennsylvania — *Philadelphia, PA*

- Led a team of developers in building a full-stack web application using React for the front-end, NodeJS for the back-end, PostgreSQL for the database, and AWS EC2 for deployment
- Employed non-parametric statistical models such as DBSCAN, Hierarchical Clustering, and K-Modes to cluster people with similar interests based on survey responses
- Utilized dimension reduction techniques such as t-SNE, UMAP and PCA to visualize multi-dimensional data and determine the optimal machine learning model for the given dataset
- Implemented the Gale Shapely algorithm for stable matching, enhancing the grouping of individuals based on their interests and preferences

Social Network Webapp | *JavaScript, HTML/CSS, MongoDB, Express, AWS* — Aug. 2023 – Dec. 2023
University Of Pennsylvania — *Philadelphia, PA*

- Spearheaded the development of "Pennstagram," a social networking web application, utilizing Agile and XP methodologies to introduce features like user registration/login, posting, and friend interactions
- Engineered a full-stack auth system using React for the frontend and Express/Node.js with MongoDB on the backend, ensuring secure and efficient communication via RESTful APIs.
- Fortified the application's security framework by integrating JSON Web Tokens (JWT) for enhanced authentication and authorization mechanisms, ensuring stringent user data protection and support for role-based access controls

Technical Skills

Languages: Python, Java, C/C++, SQL(Postgres), HTML/CSS, Matlab, Javascript
Frameworks: React, Node.js, Flask, TensorFlow, Keras, Django, MongoDB, Vue.js, PostgreSQL
Developer Tools: Git, Google Colab ,VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse, AWS, Heroku
Libraries: Pandas, NumPy, Matplotlib, Scikit-Learn, Plotly, Seaborn, PyTorch