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Derek Dang

Technical Skills

- Languages: Python (Pandas, NumPy, PyTorch, Scikit-learn, Statsmodels), Java, C++, SQL, MATLAB
- Frameworks: .Net, React, Node.js, TensorFlow
- Tools: Git, VS Code, ArcGIS, Linux

Work Experience

AI Researcher – JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

January 2024 - Present Baltimore, MD

- Assisted in Legionnaires' disease research by generating datasets of the locations of cooling towers by implementing an AI solution to identify cooling towers using satellite imagery.
- Repaired and improved a pre-trained computer visions model built using PyTorch and utilizes YoloV5 and EfficientNet B5.
- Increased detection accuracy from 50% to 91% by leveraging several different aerial and satellite imagery databases.
- Reduced running time by 50% using GPU acceleration and improved parallelization.

Unity 3D Developer – JOHNS HOPKINS HOSPITAL

August 2023 – May 2024 Baltimore, MD

- Developed a Unity 3D application for Microsoft HoloLens 2 to test peripheral vision for stroke detection.
- Designed test logic in Unity, adhering to medical guidelines.
- Collaborated with back-end developers, HoloLens experts, and medical professionals.
- Created user interfaces and detection algorithms using C# and .NET framework.

Web Developer – JOHNS HOPKINS SCHOOL OF ENGINEERING

Sep 2022 – May 2024 Baltimore, MD

- Designed and maintained a responsive website for the Computational Sensory-Motor Systems lab.
- Improved mobile compatibility and user experience using Bootstrap and JavaScript.
- Added interactive elements like forms and data visualizations.

Education

JOHNS HOPKINS UNIVERSITY

Baltimore, MD

- Master of Science in Computer Science – August 2024
- Bachelor of Science in Computer Science – May 2023

Projects

- **Legionnaires' Risk Model** (https://github.com/ddang8-jpeg/LD_Model) Logistic regression model used to classify areas of high risk for Legionnaires' disease outbreaks.
- **TowerScout** (<https://github.com/ddang8-jpeg/TowerScout>) A machine learning based tool for identifying cooling towers from satellite and aerial imagery.
- **Solar Power Predictor** (https://github.com/ddang8jpeg/solar_power_predictor) Polynomial regression model used to predict expected solar panel power output based on weather conditions and geographic location.