Xiaoyu Tian

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Education

Carnegie Mellon University

Pittsburgh, PA

B.S. in Electrical and Computer Engineering, Additional Major: Robotics; GPA: 3.74/4.00 *May 2025*

- **Courses**: Computer Systems, Imperative Computation, Web Application Development, Embedded Systems, Functional Programming, Unity Game Design, Rapid Prototyping, Digital Systems
- **Activities**: Carnegie Mellon Racing, Game Creation Society, Tartan Ambassadors

Work Experience

Youibot Robotics

Shenzhen, China

Algorithm Engineer Intern *May 2023 - Aug 2023*

- Led an end-to-end design and implementation of an advanced visual marker localization system using C++ with object-oriented programming principles, achieving 50% performance boost compared to industry popular solutions
- Collaborated with senior engineers ensuring smooth integration through scrum meetings and unit testing
- Prepared simulated and real-world data set for recurring unit testing using Unity 3D
- Github Link: https://github.com/ManciuCen/CopperTag

CMU School of Computer Science Department

Pittsburgh, PA

Teaching Assistant for Rapid Prototyping Technologies and Intermediate Rapid Prototyping *Aug 2022 - Present*

- Mentored over 40 students each semester on rapid prototyping technologies: Python, SolidWorks, Rhino 7 Grasshopper
- Assisted professor improving assignment quality and evaluated assignments with constructive feedback

Projects

Urban Rescue and Search Vehicle Control System

Mar 2023 - Apr 2023

- Partnered with mechanical engineers to deploy a multi-sensor search and rescue vehicle for total darkness operation
- Developed a vehicle control system with live video streaming and vehicle status emulation through Python web sockets
- Implemented automated detection and removal of odd colored balls using Python and computer vision techniques

Map-Based Social Networking Website

Oct 2022 - Dec 2022

- Created a full-stack social networking website for users to share nearby events on a map using Python Django web framework and deployed on AWS
- Accomplished real time events update, liked/follow system, and mobile-friendly web design using AJAX and HTML/CSS
- Integrated interactive map and secure login system with Google Maps API and Google OAuth 2.0

Kaggle Competitions

May 2020 - Jul 2022

- Received a Bronze medal in M5 Forecasting - Accuracy with a prediction score higher than 90% of teams (546/5558)
- Ranked 292 out of 4874 teams (top 6%) on final public score in American Express - Default Prediction with a model trained using time-series behavioral data and anonymous customer profile information
- Conducted exploratory data analysis, feature engineering, and hyper-parameter training on lightgbm, xgboost, catboost, and CNN using Python to create the ensemble prediction model

Prediction of Meningitis Outbreaks in Nigeria Using Machine Learning

Jan 2019 - Dec 2019

- Trained 5 machine learning models using different algorithms (LR, k-NN, RF, SVM, and NN) on a Nigeria meningitis outbreak data set with Python (scikit-learn) and achieved an average accuracy of 95%
- Compared ROC curves of trained models and selected best-performing models for future high-risk patient identification
- Presented research findings at Artificial Intelligence and Cloud Computing Conference (AICCC) in Kobe, Japan

Skills

Programming Python (pandas, NumPy, scikit-learn, Django), C/C++(CMake), Java (Object-Oriented Programming), R (ggplot2), HTML/CSS, JavaScript (AJAX), C#, SystemVerilog, Standard ML

Software Git, Linux, Matlab, SolidWorks, Rhino 7 Grasshopper 3D, Quartus, Maya, ZBrush, Unity, LaTeX (Overleaf/TeXstudio)

Hardware Arduino, Raspberry Pi, STM 32, UART, I2C, SPI, PWM