YUMING GU

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EDUCATION

M.S.E., Mechanical Engineering and Applied Mechanics (MEAM) Graduating May 2024
University of Pennsylvania, Philadelphia, PA 3.85 GPA
B.S., Mechanical Engineering Graduating May 2022
University of Pittsburgh, Pittsburgh, PA 3.75 GPA
B.S.E., Mechanical Engineering Graduating May 2022
Sichuan University, Sichuan, China 3.64 GPA

TECHNICAL SKILLS

Mechanical Design: SolidWorks, CATIAv5, 3D Experience, AutoCAD, Ansys Lumerical FDTD, Dassault ENOVIA
Programming: Python/MATLAB(Robotics), C(Operation System), Typescript/JavaScript(AWS CDK), Java

EXPERIENCE

Amazon Web Service (AWS), Seattle, WA: Software Dev Engineer Intern May 2023 – Aug 2023

- SDE Intern at AWS Fraud Prevention Engineering Team
- Build an data platform with AWS S3, AWS Lambda, AWS SNS, AWS ECS and AWS CDK (Typescript)

Tesla, Shanghai, China: Chassis System Intern May 2021 – Aug 2021

- Chassis System Intern at Tesla GigaFactory Shanghai (GFSH) R&D Engineerng Team
- Conduct Surface Design on Knuckle, design a Hub & Bearing assembly fixture for slurry test (CATIAv5)
- Designed a test platform and test plan for the brake assembly (3D Experience).
- Modified slinger makes great effect on blocking debris and reduces Vehicle off Road (VOR)

ACADEMIC PROJECTS

PennOS: A User-level UNIX-like Operating System (CIS 548 OS Design) Spring 2023 – Summer 2023

- Implement a FAT file system to keep a track of the blocks in the data region.
- Implement shell built-ins run as independently scheduled PennOS processes.
- The PennOS includes kernel thread scheuler, user shell, job control, redirection and logger.

An Autonomous VIO-based Quadcopter (MEAM 620 Advanced Robotics) Spring 2023 - Summer 2023

- Plan trajectories given ground-truth states of the robot and track them accurately (Dijkstra's algorithm/ A-star)
- Estimate robot's state given noisy sensor measurements (Visual Inertial Odometry)

Pick and Place Challenge (MEAM 520 Intro to Robotics) Fall 2022 - Spring 2023

- Develop robust algorithm for Franka Emika robot arm to acquire blocks (either stationary or in motion) and stack them on a goal platform (forward and inverse kinematics, ROS, Dijkstra's algorithm/ A-star, DH Algorithm)
- 2nd Place in final competition

ML-Based Multi-Objective Recommender System (CIS 520 Machine Learning) Fall 2022 - Spring 2023

- Develop recommender system based on Matrix Factorization and XGBoost Models to guide the customer to exact item based on their previous actions

Interferometry measurement system for Photopolymer 3D Printing (ZIP - AM Lab) Fall 2020 - Spring 2022

- Analyze raw data from interferograms video from ICM & M system, evaluate the cure height profile, remove outliers

Rapid Manufacturing of Ceramic Filters for Respirators and Masks (ZIP - AM Lab) Fall 2020 - Spring 2022

- Prepare polymer-derived ceramics (PDCs) recipe and curing samples on DLP printer
- Design filter test platform, conduct filter test based on NIOSH N95 FFR certification testing

RoboMaster University Competition (RMUC) Fall 2019 - Summer 2021

- Conducted chassis design of Sentry robot, analyzed loading performance (SolidWorks/Ansys)
- Realize visual identification, tracing, attacking functions of the Sentry Robot (PID, OpenCV, PP-YOLO)