Xiang Li

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Work Experience

Houston Methodist | Machine Learning Research Intern - Houston, TX
May 2023 - Aug 2023

- Designed a machine-learning based pipeline for brain tissue segmentation of CT scans with 81% accuracy to help medical professionals quickly isolating pathogen area.
- Optimized segmentation pipeline into a self-contained IoT device and deployed into real medical practice.

CUMMINS.INC | Software Engineer - Columbus, IN
Jan 2020 - July 2021

- Designed control software interface APIs between Cummins ECM and Bosch fuel systems running on Stellantis RAM trucks.
- Enhanced cybersecurity software of ECM by adding 2 different encryptions to the ECM bootloader to prevent unauthorized tempering of Cummins products.
- Created model-based control software with Simulink for Cummins owned components equipped on around 250,000 newly manufactured vehicles annually such as glow plug, grill shutter, and grid heater.

CUMMINS.INC | Application Eletronic Control Engineer - Columbus, IN
Jun 2019 - Jan 2020

- Tuned more than 30 calibration parameters of OBD control software in the RAM truck to ensure proper functionality of the OBD system.
- Integrated transmission software with ECM control software from multiple teams and performed regression tests on newly released software. Analyze test results pertain to FMEA procedure to diagnose root causes of software failure.
- Proposed a comprehensive FMEA and test procedure for 2 sets of software used as part of validation process.

Research Experience

Purdue University | Graduate Research Assistant
Oct 2021 - Present | Dependable Computing System Lab

- Proposed a novel multi-object, real-time tracking heuristic on resource-constrained devices that achieve tracking accuracy up to 84%. The tracker can be easily adapted into state of the arts detectors and achieve state of the art accuracy on MOT test sequences on embedded devices (Jetson TX2/AGX).
- Developed AI-based image processing pipeline for computational tomography and MRI scans, which are dedicated for clinical use.
- Developed an open source distributed computing system to perform smart task scheduling and reduce task end-to-end latency by 14% and task failure by 40% on heterogeneous personal devices across heterogeneous networks.

Leadership Experience

Purdue University | Graduate Teaching Assistant
Aug 2021 - Present

- Managed and instructed 2 labs to help 60 students learn about embedded systems, micro-controllers and basic interfacing protocols such as UART, I2C, SPI.

Publications

Conference Paper:

- X. Li, M. Abdallah, S. Suryavansh, M. Chiang, K. T. Kim and S. Bagchi, "DAG-based Task Orchestration for Edge Computing," 2022 41st International Symposium on Reliable Distributed Systems (SRDS), Vienna, Austria, 2022, pp. 23-34.

Education

Purdue University
Ph.D. in Computer Engineering
Aug 2021 - Present
West Lafayette, IN
GPA: 3.76 / 4.0

Purdue University
B.S in Computer Engineering [Distinction]
Aug 2015 - May 2019
West Lafayette, IN
GPA: 3.89 / 4.0

Skills

Programming

Proficient:
Python • C • Bash • Assembly • Embedded C • Julia

Experienced:
Simulink • LaTeX

Familiar:
Javascript • Java • HTML

Libraries/Frameworks

Pytorch • Tensorflow • React

Related Skills

Computer Vision • Machine Learning • Distributed System• AWS • CAN
Model-based software
Nvidia Jetson Platform

Honors and Awards

Dean's List and Semester Honor
Aug 2015 - May 2019

Eli Shay Scholarship
Sep 2018

Activities

Purdue Electrical and Computer Engineering Honor Society [HKN]
Aug 2017 - Present
Organizing career fair events through outreach program with more than 5 companies and volunteering for community work

IEEE Member
Aug 2017 - Present