Wei Zhang

Perception Engineer

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SUMMARY

Perception Engineer with 6 years building camera and LiDAR perception for autonomous trucks and agricultural robots. Develops computer vision and sensor fusion in C++ and Python, deploys PyTorch models with TensorRT on embedded GPUs, and validates them in simulation and on the road. Comfortable with SLAM, IMUs and multi-sensor calibration.

SKILLS

C++ • Python • Computer Vision • Sensor Fusion • LiDAR • SLAM • TensorRT • PyTorch • ROS2 Simulation

EXPERIENCE

Perception Engineer 02/2022 - Present

Huron Autonomous Trucking Ann Arbor, MI

Autonomous trucking company running 40 trucks on Midwest freight lanes.

- Build LiDAR and camera sensor fusion for object tracking out to **250 meters**, cutting missed vehicles by 40%.
- Optimize detection models with TensorRT on embedded GPUs, lowering latency from 80 ms to 28 ms.
- Develop automatic calibration for 8 cameras, 4 LiDARs and IMUs, cutting calibration from 6 hours to 40 minutes.
- Create simulation scenes for 1,200 edge cases and gate releases on recall and precision targets.

Computer Vision Engineer 07/2020 - 01/2022

Prairie Field Robotics West Lafayette, IN

Agricultural robotics startup building autonomous weeding robots.

- Trained PyTorch segmentation models that told crops from weeds at 95% accuracy across 3 crops.
- Implemented visual SLAM on ROS2 for row following, keeping robots within 2 cm of row center.
- Wrote Python data pipelines that labeled 300,000 field images with active learning.
- Fixed 25 camera sync and exposure issues with debugging tools built for the field team.

Graduate Research Assistant 08/2018 - 05/2020

Purdue University West Lafayette, IN

Computer vision lab working on 3D perception for field robots.

- Developed a LiDAR and IMU odometry method that cut drift by 30% on 3 public datasets.
- Built a C++ point cloud segmentation library used by 7 lab members.
- Ran 60 field tests on a robotic tractor to collect labeled sensor data for the lab.

EDUCATION

Master of Science 05/2020

Purdue University West Lafayette, IN

Electrical and Computer Engineering