ZHEKAI (SCOTT) JIN

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EDUCATION

Carnegie Mellon University - School of Computer Science Pittsburgh, PA
M.S. in Robotic Systems Development | GPA: 4.00/4.33 May 2021
The Cooper Union for the Advancement of Science and Art New York, NY
B.Eng, Major in Electrical Engineering, Minor in Computer Science | GPA: 3.69/4.00 May 2019
Courses related Geometry for Vision, Computer Vision, Robot Autonomy, Intro to Deep Learning

PROFESSIONAL EXPERIENCE

Uber Advanced Technologies Group Pittsburgh, PA
Localization Software Engineering Intern - Mapping Jun. - Aug. 2020

- Worked at the Localization team on evaluating the output of ATG's offline pose estimation system
- Introduced the first objective metric to evaluate the localized pose estimates in absence of an HD map
- Composed a lightweight SLAM verification pipeline which achieved a 98% classifying accuracy on a customized dataset and could easily accommodate other objective metrics for performance feedback

Momenta.ai Beijing, China
Research & Development Intern - Lidar Perception May - Aug. 2018

- Devised efficient Ground Detection & Semantic Road Segmentation algorithms with 98% precision
- Refactored Object Segmentation Modules with 20% memory usage drop by specialized data structures
- Designed and implemented a robust Real-Time Object Tracking pipeline which is able to track even sparse point clouds based on 3D Interpolation, now deployed at Momenta's L4 self-driving solution

Totem Power Inc. Bedford Hills, NY
Research & Development Intern - Wireless Drone Charging Jun. - Aug. 2017

- Designed monocular-vision-based precise landing algorithm to counter the charging range limitation
- Developed REST APIs and real-time distributed charging status monitoring system with visualization

RESEARCH EXPERIENCE

Livox SLAM Carnegie Mellon University, Biorobotics Lab | May - Sept. 2019

- Established a robust Lidar SLAM framework for Livox with its non-repetitive scanning patterns
- Incorporated intensity-based features into scan matching for high resistance to aggressive motion

Intelligent Dispatcher Bluegogo (now Didi Chuxing Technology Co.) | Apr. - Jun. 2017

- Worked on automatic feature extraction for probabilistic time series forecasting models (PCA, LSTM)
- Turned Redis sentinel mode to proxy + consistent hashing mode with Redis latency reduced by 20%
- Automated tests with TestNG and Mockito and reached code coverage of 99%

ACADEMIC PROJECTS

Learning To Drive with Reinforcement Learning Ridecell | Sept. 2019 - Present

- Designed a simulation pipeline which spawns, actuates, and monitors self-driving agents (CARLA)
- Implemented various driving scenarios including lane changing/following and intersection negotiation
- Modeled the agent with Double Deep Q Learning (DDQN) networks for different driving scenarios
- Deployed DDQN networks for agents to handle above scenarios with an average success rate of 83%

The Cooper Mapper Cooper Union, Autonomy Lab | Sept. 2018 - May 2019

- Implemented real-time 2D Lidar SLAM and Stereo Visual SLAM based on Cartographer & ORBSLAM
- Refactored and extended LOAM with map management, relocalization, and pose-graph optimization
- Developed robust resolution matching algorithms to reduce extrinsic multisensor calibration effort
- Published a first-authored paper on a MultiSensor Data Fusion approach for SLAM problem

SKILLS

Languages	C++, C, Java, Python, Matlab, HTML5, CSS3, JavaScript, SQL, Shell Scripting
Tools	MRPT, PCL, ROS, gtsam, Ceres, scikit-learn, OpenCV, PyTorch, AWS EC2/EMR/S3
Training	Sensor Fusion Nanodegree, Robotics Software Engineer Nanodegree @ Udacity