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

PROFESSIONAL EXPERIENCE

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

- Worked at the Localization team on evaluating the output of ATG's offline SLAM system
- Introduced the first objective metric to evaluate the localized pose estimates in absence of a HD map
- Composed a lightweight SLAM verification pipeline which achieved a 98% classifying accuracy on 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. 2018

- 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

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

Integrated Sensor Platform Cooper Union, Autonomy Lab | Jun. - Dec. 2017

- Led a team of five designing IoT network for human traffic flow study with a stochastic queuing model
- Implemented real-time WiFi & Bluetooth address tracking and peripheral parameters acquisition.
- Designed human detection algorithm with OpenCV to count and monitor human traffic flow in a WSN
- Implemented real-time data-driven scheduler of lighting & heat and Achieved average 2% energy saving
- Realized Telepresence by implementing Mixed Reality and Stereo Rendering: integrating camera feed from robots & peripheral environmental data to head-mounted displays (S-PTAM, Unity, C#, C++)

SKILLS

Languages	C++, C, Java, Python, Matlab, HTML5, CSS3, JavaScript, SQL, Shell Scripting
Tools	MRPT, PCL, g2o, gtsam, Ceres, scikit-learn, OpenCV, PyTorch, Kafka, Hadoop
Training	Sensor Fusion Nanodegree, Robotics Software Engineer Nanodegree @ Udacity