ZHEKAI (SCOTT) JIN

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EDUCATION

Carnegie Mellon University - School of Computer Science Pittsburgh, PA
M.S. in Robotic Systems Development 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

Momenta.ai Beijing, China
Lidar Perception Research & Development Intern 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 Jun. - Aug. 2017
- Constructed an end-to-end wireless charging solution for vertical take-off and landing drones
- 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 2019 - Present
- 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 on 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

Passive Voice to Active Voice Article Converter Cooper Union | Mar. 2018
- Rated the best Natural Language Processing final project of the 2017 - 2018 academic year
- Designed decision tree able to handle conjugation & embedded passive sentences based on linguistics
- Built visualization rendering the transformation process with dependency parsing (spaCy, Python)

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, NLTK, PyTorch, Kafka, Hadoop
Training Robotics Software Engineer Nanodegree, Self Driving Engineer Nanodegree @ Udacity