ZHEKAI (SCOTT) JIN

(929) · 354 · 6799 ⊙ zhekaij@andrew.cmu.edu ⊙ zhekaijin.github.io ⊙ Pittsburgh, PA

EDUCATION

Carnegie Mellon University - School of Computer Science Projected May 2021
M.S. in Robotic Systems Development

The Cooper Union for the Advancement of Science and Art Sept. 2015 - May 2019
B.Eng, Major in Electrical Engineering, Minor in Computer Science

PROFESSIONAL EXPERIENCE

Momenta.ai : Lidar Research & Development Intern May - Aug. 2018
Lidar Team & HD map Team on an end-to-end Lidar Perception system *Beijing, China*

· 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. : Summer Intern Jun. - Aug. 2017
Independent Research Project on a complete wireless charging system for Drones *Bedford Hills, NY*

· 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

Bluegogo (Didi Chuxing Technology Co.) : Research Intern Apr. - Jun. 2017
Dispatch Team on intelligent dispatching and dynamic pricing *Hangzhou, China*

· 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%

RESEARCH & ACADEMIC PROJECTS

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

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