

# ZHEKAI (SCOTT) JIN

(929) · 354 · 6799 · jin4@cooper.edu · zhekaijin.github.io · New York, NY

## EDUCATION

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### The Cooper Union for the Advancement of Science and Art

B.Eng in Electrical Engineering - Computer Engineering track

*Projected June 2019*

Grades

Major GPA: 3.84/4.00 Overall GPA: 3.66/4.00

Honors

Tau Beta Pi, Dean's List, School Honors, Half Tuition Scholarship, Innovation Merit

## PROFESSIONAL EXPERIENCE

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### 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. : System Research & Development 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

### 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%

## ACADEMIC PROJECTS

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### Cooper Mapper: Self-Driving Robot with MultiSensor Data Fusion

Sept. 2018 - Present

- Implemented real-time 2D Lidar SLAM and Stereo Visual SLAM based on GMapping & ORBSLAM
- Refactored and extended LOAM to support map management, relocalization, and ROS nodelet
- Working on robust resolution matching algorithms to reduce extrinsic multisensor calibration effort

### Tap News: Real-Time News Scraping and Recommendation System

Mar. - May. 2018

- Implemented a data pipeline which monitors, scrapes and dedupes latest news (Redis, RabbitMQ)
- Built a web application for users to browse news (React, Node.js, RPC, SOA, JWT)
- Implemented a click event log processor which collects users' click logs to update preference models
- Designed and built an offline training pipeline for news topic modeling (Tensorflow, DNN, NLP)
- Deployed an online classifying service for news topic modeling using the trained model

### Pass2act: Passive Voice to Active Voice Article Converter

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)

### Cooper-IoT: Generic IoT Platform with Telepresence Utility

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++)

## COMPUTER SKILLS

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### Languages

C++, C, Java, Python, Go, Matlab, HTML5, CSS3, JavaScript, SQL, Shell Scripting

### Technology

MRPT, PCL, g2o, gtsam, Webots, scikit-learn, NLTK, PyTorch, Kafka, Hadoop, Spark

### Training

Robotics Software Engineer Nanodegree, Self Driving Engineer Nanodegree @ Udacity