Fan Li

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Education Experience

- **Sun Yat-Sen University** Master of Engineering
  School of Data and Computer Science·Software Engineering 2018.09 – 2020.06
  - GPA: 88.10/100
  - Related Courses: Digital Image Processing, Stochastic Processes, Modern Artificial Intelligence.
- **Tongji University** Bachelor of Engineering
  School of Automotive Studies·Vehicle Engineering (Automobile) 2013.09 – 2018.06
  - GPA: 83.23/100
  - Related Courses: Automobile Theory, Automobile Design, Computer Hardware Technology, Automatic Control Theory, Computer Software Development.

Publication

- [1] **Fan Li**, Yunxiao Shan, Mingyue Cui, Kai huang: ***DeepPlanning: Deep Learning-based Planning Method for Autonomous Parking***, (Under review at The International Conference on Automated Planning and Scheduling (ICAPS))

Research

- **Motion Planning for Autonomous Driving** 2018.09 – Now
  - My research topic during the Master period is motion planning for autonomous driving. I focus on the fusion of traditional methods and deep learning methods. Specifically, I work on using the deep convolutional neural networks (YOLO, R-CNN, etc.) to provide a more effective heuristic for sampling-based planning methods (RRT*, Bi-RRT*, etc.).
  - From Sep. 2018 to May 2019, I had proposed a method: using CNNs to generate a more applicable sampling heuristic for RRT* used for autonomous cruising. The work derived an invention patent.
  - From May 2019 to Now, I am working on path planning for autonomous parking. I propose a two-stages method using firstly CNNs to infer a path directly and then RRT*-based algorithms to guarantee the path is feasible. A paper of that work is reviewed by the ICAPS conference now.
- **Tongji students innovative training program** 2016.09 – 2017.09
  - This is a project launched by Tongji University for training students on researching. I explored a new suspension system for small electric vehicles based on the in-wheel motor technology, The proposal passed the evaluation held by the university.

Awards

- Third-level Excellent Graduate Student Scholarship of Sun Yat-Sen University 2019
- Third-level Excellent Graduate Student Scholarship of Sun Yat-Sen University 2018
- The Overall Winner of PUMA project on PACE Annual Global Conference 2017
- Outstanding Student of General Motors PACE 2015
- Third-level Excellent Student Scholarship of Tongji University 2014

Skills

- **English:** IELTS 6.0(L6.0+R7.5+W5.5+S5.0), GRE 311(V148+Q163)+3.0
- **Programming:** Programming: Tensorflow (proficiency), CARLA (proficiency), ROS (proficiency), Python (proficiency), Matlab (basic), C/C ++ (basic).
- **Interest Fields:** Geometry, Planning, Machine Learning, Autonomous Driving

Employments

- **SAIC Volkswagen** 2018.05 – 2018.06
  Internship, EPTP Dep. Shanghai, China
  - I worked on the research of the localization of a product lifecycle management software widely used in Volkswagen (German) and was mainly responsible for the analysis of the functions of the software.
- **NIO Automobile** 2017.12 – 2018.05
  Internship, AIS Dep. Shanghai, China
  - I worked on the development of the android application of a voice control system for the automobiles and was mainly responsible for the implementation of the UI interface and the UX user interaction.

Activities

- **I-VISTA Challenge** 2018.08 – 2018.09
  Team Member Chongqing, China
  - It is a competition of autonomous driving held in Chongqing, China. It includes five subs: Automatic Parking (AP), Automatic Emergency Brake (AEB), Innovation Application (IA), Commercialization Process (CP), and Urban Traffic (UT).
  - I was a team member of the Sun Yat-sen University team. My Team participated in AEB, IA, CP, and UT. And we were ranked medium among 20+ teams finally.
- **PACE Center of Tongji University** 2014.09 – 2017.09
  Student Leader Shanghai, China
  - TJU PACE is an organization held by both Tongji University and PACE (https://pacepartners.org/).
  - As a project leader, I was in collaboration with more than 30 students from the Polytechnic of Turin (UNITO) and Korea National University (Kookmin University), before and after, participated in two international cooperation projects: the RSMS (2016) and PUMA (2017). Both projects are competition projects, RSMS is a project to design and engineer a theoretically producible reconfigurable shared-use vehicle based on current or emerging technology, and PUMA requires teams to create a vehicle for commuting in a city that is buildable and theoretically producible for mass-production using current technology. RSMS project results in 2016, the annual global conference of the PACE in USA acclaim. PUMA project results obtained in 2017 annual global conference of PACE, the first prize of the overall project, the industrial design, and manufacturing engineering.
  - As a project director, I guide the independent research and development project of Tongji PACE which called Smart Express System (IDS). The project won the first prize and the sixteenth Chen Geng Qing Shanghai Young Inventors Awards prize in 2017 CIC PACE global competition.
  - I also create a unique project management tool called KRRS for Tongji PACE center, to quantify the progress of the project and members' contribution to the project.