

Tampere, Finland
+358504805190
junsheng.fu@tut.fi

Junsheng Fu

[GitHub](#)
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[Patents](#)

I am an experienced researcher, a quick learner and a problem solver, passionate about autonomous driving, with 8 patents applications and 4 papers. I like to think “what if” and “how to”, and enjoy applying Computer Vision and Deep Learning techniques to solve the challenges in autonomous driving.

Technical skills

Languages: Python, Matlab, C/C++

Frameworks: TensorFlow, Keras, CUDA, OpenCV, Scikit-learn,

Others: Camera pose estimation, Machine Learning, Structure-from-motion, Tracking, SLAM, Git, Linux

Projects

Sensor fusion-based tracking	Demo	5.2017
<ul style="list-style-type: none">Designed and implemented an Extended Kalman Filter for object tracking with C++.Utilized fused sensor data from both LIDAR and RADAR sensors.		
Vehicle detection	Demo	4.2017
<ul style="list-style-type: none">Created vehicle detection and tracking pipeline with two approaches, deep neural networks (YOLO+TensorFlow) and support vector machines (HOG+OpenCV).Optimized and evaluated the model on video data from both highway and city driving.		
Lane departure warning	Demo	3.2017
<ul style="list-style-type: none">Designed and implemented a lane-finding algorithm and a lane-departure-warning system.Identified lane curvature and overcame environmental challenges, e.g. shadows, pavement changes.		
Driving behavioral cloning	Demo	2.2017
<ul style="list-style-type: none">Built and trained a CNN to autonomously steer a car in a game simulator, using TensorFlow and Keras.Used optimization techniques such as regularization and dropout to generalize the network for driving on unseen tracks.		

Experience

Tampere University of Technology	Doctoral Student	Finland 1.2014-12.2017
<ul style="list-style-type: none">Implemented 6 autonomous driving demos with OpenCV and TensorFlow (videos).Working on camera pose estimation with LIDAR and street-view images.Served as teaching Assistant for “SGN-13006 Introduction to Pattern Recognition and Machine Learning”, and got the best course reviews award from students in 2016 Fall Semester.		
Nokia Research Center (Nokia Tech)	Computer Vision Researcher	Finland 3.2012-12.2015
<ul style="list-style-type: none">Designed and implemented a 3D Map Augmented Photo gallery application with HERE Map (video).Developed an Interactive Video Playback System with HERE Map (video).Implemented 3D reconstruction and visualization systems for indoor 3D smart sensing.		
Tampere University of Technology	Research Assistant	Finland 9.2010-12.2011
<ul style="list-style-type: none">Designed and implemented a real-time video denoising filter with C.Embedded a denoising filter into H.264/AVC codecs.		
Demola	Software Engineer	Finland 3.2010-8.2010
<ul style="list-style-type: none">Implemented a face tracking application in Nokia N900 mobile phone with OpenCV and QT.		

Education

Tampere University of Technology, Finland - <i>Computer Vision</i> , Ph.D.	GPA: 4.83 / 5	2017
Tampere University of Technology, Finland - <i>Signal Processing</i> , M.Sc.	GPA: 4.45 / 5	2012
Hangzhou Dianzi University, China - <i>Telecommunication</i> , B.Eng.	GPA: 85 / 100	2009
Udacity - <i>Self-Driving-Car Engineer</i> Nanodegree		2017