

# WANG, NAN

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## RESEARCH INTERESTS

Motion Planning & Control in Autonomous Vehicle and Robotics  
Hybrid Dynamic Systems

## EDUCATION

- 09/2018–Now PhD student in Computer Engineering, **University of California Santa Cruz**, Santa Cruz, United States
- 09/2015–06/2018 MEng in Control Science and Engineering, **Tongji University**, Shanghai, China
- 09/2011–06/2015 BEng in Automation, **East China University of Science and Technology**, Shanghai, China

## PUBLICATIONS

- Conference Papers:** **Nan Wang**, Mengxuan Song, Jun Wang, Timothy Gordon, A Flow-Field Guided Method of Path Planning for Unmanned Ground Vehicles, *56th IEEE Conference on Decision and Control (CDC 2017)*. (Published)
- Mengxuan Song, **Nan Wang**, Jun Wang, Timothy Gordon, A fluid dynamics approach to motion control for rigid autonomous ground vehicles, *25th International Symposium on Dynamics of Vehicles on Roads and Tracks (IAVSD 2017)*. (Published)
- Journal Papers:** Mengxuan Song, **Nan Wang**, Jun Wang, Flow-field Guided Steering Control for Rigid Autonomous Ground Vehicles in Low-speed Manoeuvring, *Vehicle System Dynamics Special Journal Issue: Motion Control for Automated Driving and Autonomous Functions* (Published)
- Nan Wang**, Mengxuan Song, Jun Wang, A Trajectory Planning Method for Autonomous Ground Vehicles Guided by Fluid Flow in Dynamic Environment, (Written)
- Patents:** **Nan Wang**, Mengxuan Song, Jun Wang, A Fluid Flow based Planning Method for Autonomous Vehicle. (Application Number: 201710805297.2)
- Nan Wang**, Mengxuan Song, Jun Wang, A Trajectory Planning Method based on Fluid Flow for Autonomous Vehicle. (Application Number: 201711240203.8)

## AWARDS

- Team Awards**
- Oct. 2015 Top 8 of Chinese 7th Intelligent Vehicles Future Challenge (IVFC 2015), Changshu, Suzhou, China
- Aug. 2014 2nd Prize in Siemens Cup Challenge for Industry Automation for Nation-wide College Students, Ma'anshan, Anhui, China
- Jan. 2014 3rd Prize in China Undergraduate Mathematical Contest in Modeling
- Personal Awards**
- Jun. 2015 Honor Graduate of 2015 in East China University of Science and Technology

Jun. 2015 Outstanding Graduate of Shanghai City  
 Jun. 2013 Excellent Student  
 Jun. 2012 Excellent Student Cadre  
 Jun. 2012 Community Contribution Award Class A

## GRADES

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<b>Graduate:</b>	88/100 (Major)	88/100 (Overall)
<b>Undergraduate:</b>	86/100 (Overall)	(Rank: 10/105)

## RESEARCH EXPERIENCES

### Graduate

Jul. 2015-Oct. 2015 Developed a software tool for high-accuracy GPS data processing  
**Achievement:** Awarded in the *Chinese 7th Intelligent Vehicles Future Challenge (IVFC 2015)*, Changshu, Suzhou, China

Nov. 2015-Jun. 2016 Proposed and verified a path planning method for auto-parking task  
**Achievement:** Our team implemented an experiment prototype with auto-parking function

Sep. 2016-Mar. 2017 Proposed a path planning framework based on the fluid flow in static environment  
**Achievement:** Two papers are accepted by the *56th IEEE Conference on Decision and Control (CDC2017)* and the *25th International Symposium on Dynamics of Vehicles on Roads and Tracks (IAVSD2017)*. Two patents are submitted and under review.

Mar. 2017-Now Working on the trajectory planning of autonomous vehicle in dynamic environment based on 3D fluid flow field  
**Achievement:** A journal paper is accepted by the *Vehicle System Dynamics Special Journal Issue: Motion Control for Automated Driving and Autonomous Functions* and another journal has been finished

### Undergraduate

Apr. 2014-Jul. 2014 Designed a health-care device based on Microsoft Kinect, pulse sensor, temperature sensor and humidity sensor  
**Achievement:** Awarded the *2nd Prize in Siemens Cup Challenge for Industry Automation for Nation-wide College Students*.

May. 2015-Jul. 2015 Proposed a knitting fabric pattern recognition method for automated textile industry using simulated annealing genetic algorithm (SAGA)

Jan. 2015-Jul. 2015 Proposed an improved path planning method based on Theta\* algorithm.  
**Achievement:** Awarded *outstanding graduation thesis honor*.

## OTHER ACTIVITIES

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Reviewer of the *2017 American Control Conference*  
 Reviewer of the *56th IEEE Conference on Decision and Control*

## ADVISOR

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<b>Ricardo Sanfelice</b>	Professor Department of Computer Engineering <b>University of California Santa Cruz</b>
<b>Jun Wang</b>	Professor Department of Control Science & Engineering, <b>Tongji University</b>

**Timothy Gordon**

Professor

Head of School of Engineering in **University of Lincoln**

President of **the International Association for Vehicle System Dynamics (IAVSD)**

former Research Professor, **University of Michigan**

**Mengxuan Song**

Assistant Professor

Department of Control Science & Engineering, **Tongji University**