

MR. YIHANG ZHANG

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EDUCATION

University of Southern California (Los Angeles, USA) Ph.D. student in Electrical Engineering	<i>Aug. 2012 - May. 2017 (Expected)</i> GPA: 3.85/4.0
Northwestern Polytechnical University (Xi'an, China) M.S. in Control Science and Engineering	<i>Sept. 2010 - Jul. 2012</i> GPA: 84/100
Northwestern Polytechnical University (Xi'an, China) B.S. in Automation	<i>Sept. 2006 - Jul. 2010</i> GPA: 88/100

RESEARCH EXPERIENCE

- USC Center of Advance Transportation Technologies** Aug 2012 - Present
Research Assistant Los Angeles, CA
- Proposed a speed control method to improve traffic mobility, safety and reduce tailpipe emission on highway.
 - Proved the stability of speed control method with a macroscopic traffic flow model.
 - Developed a Python/C++-based microscopic traffic flow model to simulate and evaluate different traffic control strategies on real highway networks.
 - Developed a data-driven emission model to evaluate the emission and energy consumption of vehicles with speed and acceleration information.
- NPU Lab of Guidance & Control Technology** Sept 2010 - Jun 2012
Research Assistant Xi'an, China
- Proposed a multi-criteria decision making method to implement the general design of integrated guidance and control system of Unmanned Aerial Vehicles (UAVs).
 - Designed a robust pitch-channel controller for UAVs with simple parameter-tuning procedure.
 - Graduate thesis: *Multi-Criteria Decision Making Method and Its Application*

PUBLICATIONS

- Zhang, Y. & Ioannou, P.A., "Combined Variable Speed Limit and Lane Change Control for Highway Traffic", accepted, IEEE transactions on intelligent transportation systems 2016.
- Zhang, Y. & Ioannou, P.A., "Environmental Impact of Combined Variable Speed Limit and Lane Change Control: A Comparison of MOEVS and CMEM Model", in the 14-th IFAC Symposium on Control in Transportation Systems (CTS 2016).
- Zhang, Y. & Ioannou, P.A., "Highway Traffic Flow Control with High Volume of Trucks", in 2015 METRANS International Urban Freight Conference, Nov, 2015
- Zhang, Y. & Ioannou, P.A., "Combined variable speed limit and lane change control for truck dominant highway segment", in 18th IEEE International Conference on Intelligent Transportation Systems, Sep. 2015.
- Zhang, Y. & Hou, M., "Multi-criteria Decision-making for Guidance System Design Parameters", in Acta Armamentarii, Jan. 2014. (In Chinese)
- Zhang, Y. & Hou, M., "Robust Multi-Criteria Decision Making for Guidance System Design Parameters", in SAMSON, 2013. (In Chinese)

WORKING EXPERIENCE

- University of Southern California** Aug 2012 - Present
Teaching/Research Assistant Los Angeles, CA
- Instruct labs, lectures and discuss sessions of *Introduction to C++ Programming*, *Digital Control Systems* and *Financial Mathematics*.
 - Execute research project on nonlinear control systems and intelligent transportation systems in Center of Advanced Transportation Technology of USC with Prof. Petros Ioannou.
- General Electric (GE Aviation)** July 2011 - August 2011
Intern Flight Test Engineer Xi'an, China
- Collaborated in the flight test of ARJ-21 regional jetliner and CF34-10A turbofan engine.
 - Helped the retrofit and test of engine transducers on CF34-10A.
 - Translated the flight manual of ARJ-21 into English.
 - Administered the development of on-site configuration control database of CF34-10A

PROFESSIONAL SERVICES

Academic Talks

- “Environmental Impact of Combined Variable Speed Limit and Lane Change Control: A Comparison of MOEVS and CMEM Model”, 14-th IFAC Symposium on Control in Transportation Systems (CTS 2016), Istanbul, Turkey, 2016
- “Stability of Highway Traffic System with Combined Variable Speed Limit and Lane Change Controller”, 29th Southern California Control Workshop, Los Angeles, USA, 2015
- “Highway Traffic Flow Control with High Volume of Trucks”, 2015 METTRANS International Urban Freight Conference, Long Beach, USA, 2015
- “Intelligent Transportation and Energy Saving”, 2015 USC/Chevron Frontiers of Energy Resources Summer Camp, Los Angeles, USA, 2015
- “Combined Variable Speed Limit and Lane Change Control for Truck-Dominant Highway Segment”, 28th Southern California Control Workshop, Los Angeles, USA, 2015
- “Combined Variable Speed Limit and Lane Change Control for Highway Traffic”, 5th Annual Ming Hsieh Department of Electrical Engineering Research Festival, Los Angeles, USA, 2014

Reviewers

- IEEE Transaction on Intelligent Transportation Systems.
- Elsevier Case Studies on Transport Policy
- 2016 IFAC 14th Control in Transportation Systems (CTS 2016).
- 2015 IEEE Intelligent Vehicles Symposium (IV 2015).
- 2014 IEEE 6th International Symposium on Communications, Control and Signal Processing (ISCCSP).

AWARDS & HONORS

- 2012 Provost Fellowship of USC
- 2011 Graduate Fellowship of NPU
- 2010 Successful Participant in 2010 National Model United Nations Conference
- 2008 Second Prize of Chinese University Mathematical Contest in Modeling

TECHNICAL STRENGTHS

Programming Languages	Python, C++, Java, MATLAB, C
Tools	Simulink, L ^A T _E X, Microsoft Office