

Resume of Yajia Zhang

Email: yajia.zhang@gmail.com

Phone: (812)369-5806

Education

Ph.D. in Computer Science 2015

Indiana University Bloomington, USA

Thesis: Knowledge Driven Motion Planning

Advisor: Dr. Kris Hauser

M.S. in Computer Science 2010

Indiana University Bloomington, USA

B.E. in Software Engineering 2008

Nankai University, China

Work Experience

Oct. 2023 – Current **Staff Engineer, Autonomy**

660 Hansen Way, Palo Alto, CA 94306

- Develop and deploy planning algorithms for structured environment (highway, local road)
- Major contributor to feature Universal Hands Free (UHF)



RIVIAN

Jan. 2021 – Oct. 2023 **Senior Staff Engineer**

3940 Freedom Cir Santa Clara, CA 95054

- Exceptional New-XPENGERS Award 2021
- Tech Lead in Planning
- Delivered products: **HNGP**, **CNGP**, **XNGP** (Highway-City-XPeng Navigation Guided Pilot)

X P E N G

Sep. 2019 – Jan. 2021 **Senior Robotics Engineer**

333 Brannan St, San Francisco, CA 94103

- Develop planning algorithms for Cruise's Robo-taxi program (L4)



Aug. 2018 – Sep. 2019 **Senior Architect**

Jan. 2018 – Aug. 2018 **Architect/Staff Engineer**

July 2016 – Jan. 2018 **Senior Research Engineer**

1195 Bordeaux Dr, Sunnyvale, CA 94089

- Tech Lead in Planning
- Lead research and development of planning algorithms for autonomous vehicles; build and integrate the motion planning module in the autonomous driving system.
- Delivered product: Baidu Apollo Open Source Platform for Autonomous Vehicles



July 2015 – July 2016 **Autonomous Driving R&D Engineer**

Bosch Research & Technology Center

4009 Miranda Ave, Suite 150, Palo Alto, CA 94304

- Develop planning algorithms for highway automated driving (L3)



BOSCH
Invented for life

Publications

Conferences and Journals

[1] **Y. Zhang**, H. Sun, J. Zhou, J. Pan, J. Hu, J. Miao. Optimal Vehicle Path Planning Using Quadratic Optimization for Baidu Apollo Open Platform. IEEE Intelligent Vehicles Symposium (IV), Las Vegas, USA, 2020

[2] **Y. Zhang**, H. Sun, J. Zhou, J. Hu, J. Miao. Optimal Trajectory Generation for Autonomous

- [3] J. Luo, **Y. Zhang**, K. Hauser, H. A. Park, M. Paldhe, C. S. George Lee, M. Grey, M. Stilman, J. H. Oh, J. Lee, I. Kim, P. Oh. Robust Ladder-Climbing with a Humanoid Robot with Application to the DARPA Robotics Challenge. IEEE Int'l Conference on Robotics and Automation (ICRA), Hong Kong, China, 2014
- [4] **Y. Zhang**, J. Luo, K. Hauser, H. A. Park, M. Paldhe, C. S. G. Lee, R. Ellenberg, B. Killen, P. Oh, J. H. Oh, J. Lee, I. Kim. Motion Planning and Control of Ladder Climbing on DRC-Hubo for DARPA Robotics Challenge. [Video submission] IEEE Int'l Conference on Robotics and Automation (ICRA), Hong Kong, China, 2014
- [5] **Y. Zhang**, K. Hauser. Unbiased, Scalable Sampling of Protein Loop Conformations from Probabilistic Priors. BMC Structural Biology 2013, 13(Suppl. 1):S9, doi:10.1186/1472-6807-13-S1-S9 (impact factor 2.10)
- [6] **Y. Zhang**, J. Luo, K. Hauser, R. Ellenberg, P. Oh, H. A. Park, M. Paldhe and C. S. G. Lee. Motion Planning of Ladder Climbing for Humanoid Robots. IEEE Int'l Conference on Technologies for Practical Robot Applications (TePRA), Boston, MA, USA, 2013
- [7] **Y. Zhang**, K. Hauser, J. Luo. Unbiased, Scalable Sampling of Closed Kinematic Chains. IEEE Int'l Conference on Robotics and Automation (ICRA), Karlsruhe, Germany, 2013
- [8] J. Johnson, **Y. Zhang**, K. Hauser. Minimizing Driver Interference under a Probabilistic Safety Constraint in Emergency Collision Avoidance Systems. IEEE Intelligent Transportation Systems Conference (ITSC), Anchorage, AK, USA, 2012
- [9] **Y. Zhang**, J. Luo, K. Hauser. Sampling-based Motion Planning with Dynamic Intermediate State Objectives: Application to Throwing. IEEE Int'l Conference on Robotics and Automation (ICRA), St. Paul, MN, USA, 2012

Workshops

- [10] K. Hauser, **Y. Zhang**. Planning-Aided Robot Design: Unified Optimization of Form, Physics, and Motion. ICRA Workshop on Task-based Optimal Design of Robots, Hong Kong, China, 2014
- [11] **Y. Zhang**, J. Luo, K. Hauser. Planner-aided Design of Ladder Climbing Capabilities for a DARPA Robotics Challenge Humanoid. ICRA Workshop on Progress and Open Problems in Motion Planning and Navigation for Humanoids, Karlsruhe, Germany, 2013
- [12] **Y. Zhang**, K. Hauser. Unbiased, Scalable Sampling of Constrained Kinematic Loops. BIBM Workshop on Computational Structural Bioinformatics, Philadelphia, PA, USA, 2012
- [13] J. Johnson, **Y. Zhang**, K. Hauser. Semiautonomous Longitudinal Collision Avoidance Using a Probabilistic Decision Threshold. IROS Workshop on Perception and Navigation for Autonomous Vehicles in Human Environments, San Francisco, CA, USA, 2011
- [14] **Y. Zhang**, K. Hauser. Driver Interference and Risk in Semi-autonomous Braking Under Uncertainty. Intl. Workshop on Collaborative Robots and Human Robot Interaction, Philadelphia, PA, USA, 2011