DAVID PAZ

dpazruiz@ucsd.edu ◇ http://dfpaz.com ◇ (857) 285-8033
Atkinson Hall 6th Floor ◇ 9500 Gilman Dr. ◇ La Jolla, CA 92093

EDUCATION

University of California, San Diego
Computer Engineering, B.S. *June 2018*
Intelligent Systems, Robotics, and Control, M.S. *March 2020*
Computer Science and Engineering, PhD. *Planned 2023*
Member of Eta Kappa Nu, and IEEE

Related Courses: Introduction to Autonomous Vehicle Technology, Introduction to Robotics, Computer Vision, Advanced Data Structures, Statistical Learning, Deep Learning, Reinforcement Learning, Sensing and Estimation, Operating Systems, Computer Architecture, and Software Engineering

San Diego Mesa College *May 2015*
A.A.S, Physics.
Major GPA: 3.87

EXPERIENCE

Contextual Robotics Institute, UC San Diego October 2017 - Present
Autonomous Vehicle Laboratory Research Assistant and Project Lead *San Diego, CA*

- Developed control strategies for steering, acceleration and braking on GEM e6 vehicles (Accepted at FSR2019)
- Designed planning strategies for obstacle detection, vehicle following, intersection and crosswalk logic.
- Built dense point-cloud maps at the UCSD campus for LiDAR-based localization
- Led team for the development of a probabilistic semantic mapping approach that leveraged UCSD maps (Accepted at IROS2020).
- Deployed two autonomous vehicles at the UCSD campus for mail delivery applications over the period of six months (Accepted at IROS2020).
- Current research involves the multi-modal characterization of pedestrian and vehicle trajectory prediction, and dynamic planners –supervised by Dr. Henrik I. Christensen.
- For more details, please visit avl.ucsd.edu

TuSimple July 2018-May 2019
UC San Diego Verification Partner *San Diego, CA*

- Assisted on developing a logging device for bench-marking the performance of Level 4 autonomous trucks. Developed, verified and performed initial testing on UCSD self-driving cars. For additional details on the study, please click here.

Computation Structures Group, MIT CSAIL June 2017 - September 2017
Convolution Accelerators Researcher *Cambridge, MA*

- Developed flexible two-dimensional convolution accelerators ideal for IoT to provide significant performance gains over sequential computations and flexibility over application-specific accelerators such as Convolution Neural Networks–supervised by Dr. Arvind.

San Diego Supercomputer Center, UC San Diego December 2016 - July 2017
High Performance Computing Containerization Research Assistant *San Diego, CA*

- Developed software for the Comet supercomputer and explored the capabilities and limitations of Singularity containers in HPC–supervised by Dr. A. Majumdar.

i-Trek, MIT August 2016 - August 2018
Lead Detection and Sensing Researcher *Cambridge, MA/ San Diego, CA*

· Worked on the development of a portable device to detect harmful agents in water. Project supervised by Dr. N. Farve and Dr. K. Frazier.

TECHNICAL SKILLS

Programming	Python (+ PyTorch), C++, C, Java, Shell Scripting, Matlab
Robotics	LiDAR Technology, Fusion and Perception, Planning, and Controls
Machine Learning	SVM, PCA, LDA, EM, Deep Learning, Reinforcement Learning
Software Tools	ROS, Docker, Git, GDB, Valgrind, Singularity Containers
Digital Design	Verilog: FSM Design using Xilinx, BlueSpec Verilog

PUBLICATIONS

1. David Paz, Hengyuan Zhang, Qinru Li, Hao Xiang, and Henrik Christensen. Probabilistic semantic mapping for urban autonomous driving applications, 2020
2. David Paz, Po jung Lai, Nathan Chan, Yuqing Jiang, and Henrik I. Christensen. Autonomous vehicle benchmarking using unbiased metrics, 2020
3. David Paz. Autonomous vehicles: Their capabilities and limitations. In *UC San Diego Electronic Theses and Dissertations*, 2020
4. David Paz, Po-Jung Lai, Sumukha Harish, Hengyuan Zhang, Nathan Chan, Chun Hu, Sumit Binnani, and Henrik Christensen. Lessons learned from deploying autonomous vehicles at UC San Diego. In *Field and Service Robotics*, Tokyo, JP, August 2019
5. Emily Le and David Paz. Performance analysis of applications using singularity container on sdsc comet. In *Proceedings of the Practice and Experience in Advanced Research Computing 2017 on Sustainability, Success and Impact*, PEARC17, pages 66:1–66:4, New York, NY, USA, 2017. ACM