

Curriculum Vitae

Jeremy D. Castagno

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SUMMARY

I am in my second year pursuing a Ph.D. in Robotics at the University of Michigan specializing in autonomy & safety for Unmanned Aerial Systems (UAS). My work focuses on emergency landing for UAS by helping augment decision making capabilities through machine learning and multi-modal data fusion. My B.S. is in Chemical Engineering from Brigham Young University (BYU) with minors in Computer Science and Mathematics. I previously worked for Valero Energy Corporation as a process control engineer where I provided operation support and helped design and certify safety systems. While I studied at BYU I worked part time as a Research Assistant for a group called PRISM or Process Research and Intelligent System Modelling (<http://apm.byu.edu/prism>). My research there focused on real time model predictive control and parameter estimation. My area of expertise is in machine learning, modelling physical systems, and developing robust control strategies.

RELATED EXPERIENCE

Valero Energy Corporation, Memphis, TN

May 2013- October 2015

Process Control Engineer

Daily control systems support for operation of multiple process units.

Reviewed and verified several safety systems through simulation and creation of detailed test plans.

Lead gasoline blending control system upgrade while incorporating advanced process control with an estimated savings of 2 MM/yr.

Systems administrator of workstations, servers, and firewalls for the Process Control Network.

Brigham Young University PRISM, Provo, UT

August 2012- April 2013

Research Assistant

Assisted graduate research and publication of Moving Horizon Parameter Estimation (MHE) of UAV's.

Developed and implemented real time mixed-integer nonlinear programming control of a laboratory benchmark system utilizing MATLAB.

Programmed an interface (C++) between MATLAB and a laboratory control system while documenting all features clearly.

Valero Energy Corporation, San Antonio, TX

April 2012- August 2012

Economics & Process Optimization Intern

Performed a thorough engineering statistical analysis of corporate gasoline blend models. These models are used in predicting gasoline properties and are executed in planning for several oil refineries.

Identified model weaknesses and implemented improvements resulting in a 50% increase in model accuracy.

EDUCATION

M.S. Robotics
University of Michigan
GPA: 3.87

August 2016-April 2018

B.S Chemical Engineering
Brigham Young University
GPA: 3.73
Minors: Computer Science (GPA: 4.0), Mathematics (GPA: 3.85)

August 2006-April 2013

PROFESSIONAL SERVICE AND MEMBERSHIPS

International Society of Automaton Member (ISA)

COMMUNITY SERVICE

Study Abroad Engineers Without Borders, Cusco, Peru & Provo, Utah
Organized a multi-discipline engineer team creating low cost water filters.
Designed, created, and distributed multiple engineering projects in rural villages.

August 2011-May 2012

Volunteer Representative, India
Served as missionary for The Church of Jesus Christ of Latter-day Saints
Coordinated efforts of sixteen representatives as zone leader

July 2008 – July 2010

HONORS AND AWARDS

BYU Alvina Soffel Barrett Scholarship
BYU General Engineering Scholarship

2011 - 2013

2010 - 2011

PEER REVIEWED JOURNAL PUBLICATIONS

1. Castagno, J. and Atkins, E. M., Automatic Classification of Roof Shapes for Multicopter Emergency Landing Site Selection, AIAA Conference. [Submitted](#)
2. Sun, L., Castagno, J., Hedengren, J. D., and Beard, R. W., Parameter Estimation for Towed Cable Systems Using Moving Horizon Estimation, IEEE Transactions on Aerospace and Electronic Systems, in press, 2014. [Preprint](#)