

# Jeremy Castagno

## Robotist & Software Engineer

Springfield, MA

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I am an engineer, computer scientist, and roboticist. My area of expertise is in machine learning, systems modeling, simulation, and developing robust decision-making strategies. I enjoy programming in C++, Python, and creating high-fidelity simulations.

## Education

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<b>Doctor of Philosophy – Robotics</b>	University of Michigan	Sep 2016 – May 2021
<b>Master of Science – Robotics</b>	University of Michigan	Sep 2016 – May 2018
<b>Bachelor of Science – Chem. Eng.</b> Minors: Computer Science & Math	Brigham Young University	Sep 2006 – April 2013

## Work Experience

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**Assistant Professor**                      **Springfield College Computer Science**                      **Aug 2021 – Present**

Developing new Computer Science curriculum that combines both theory and practical skills for today's industry

**Computer Vision Engineer**                      **Reliable Robotics**                      **Jun 2022 – Aug 2022**

Developed visual positioning software using traditional computer vision techniques from LWIR cameras  
Performed detailed model analysis demonstrating high accuracy with >99% availability with real-world data

**Robotics PhD Candidate**                      **University of Michigan**                      **Sep 2016 – July 2021**

Presented first rigorous method to incorporate rooftops as emergency landing sites for small drones in cities  
Conducted large-scale multi-city analysis for predicting roof shapes utilizing deep learning with sensor fusion  
Created state of the art parallelized non-convex [polygon extraction algorithm](#) for both 2D and 3D data

**Independent Consultant**                      **National Security Innovation Network**                      **Jan 2020 – Jun 2020**

Reviewed predictive maintenance methods for DOD assets and interviewed personnel  
Presented whitepaper proposal for video/audio information extraction using computer vision and NLP

**Computer Vision/LiDAR Eng.**                      **NASA Langley Research Center**                      **May 2019 – Aug 2021**

Conducted experiments for real-time landing site selection of drones with onboard LiDAR

**Process Control Engineer**                      **Valero Energy Corporation**                      **May 2013 – Oct 2015**

Led advanced control system upgrade with an estimated savings of 2 million/year at oil refinery  
Conducted simulation, hardware-in-the-loop, and live field testing of control and safety systems

## Selected Publications & Awards

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**Amazon re:MARS**    Rooftop Landings for Safe Urban Drone Operations. Link to [Presentation](#)

**DOD Hackathon**    1<sup>st</sup> Prize winner for developing algorithms tracking wildfire with drones. [\\$27,000 cash prize](#)

**NSIN Hackathon**    1<sup>st</sup> Prize winner for presenting methods for AI-enabled user interfaces. [\\$15,000 contract](#)

## Skills

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Python | C++ | TensorFlow | PyTorch | Linux | Docker | CUDA | JavaScript | Simulation | GIS