

Transportation Technology Influencing Our Future

Panel Session Presentation
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Brannon Center, NSB Florida

Charles Reinholtz
Professor of Mechanical Engineering

Overview

- Societal changes driving technology
- Why safety (and product liability lawsuits) may expedite vehicle automation
- Technology will probably augment driver capability for a generation
- New problems, concerns and opportunities will emerge as people adapt to the technology
- Overview of Embry-Riddle display and demo vehicles

US Traffic Fatalities

Insurance Institute for Highway Safety

Year	Fatalities	Vehicle Miles (billions)
1921	13,253	55
1972	54,589	1,259
2005	43,510	2,989
2016	37,461	3,220
2050	0?	10,000?

Who Will Learn to Drive in 2050?



<http://www.jokeroo.com/user-content/pictures/funny/2012/8/1027278-learning-to-drive.html>

Social Change: Change in the % of People with a Driver's License*

Age	Change 1983-2014	Change 2008-2014	Change 2011-2014
16	-47.0%	-21.2%	-10.9%
17	-34.8%	-10.2%	-0.2%
18	-25.2%	-8.1%	-0.3%
19	-21.0%	-8.6%	-0.4%
20-24	-16.4%	-6.5%	-3.8%

*The University of Michigan Transportation Research Institute, January, 2016

Basic Principle of Product Liability:

A manufacturer or distributor of a product is liable to compensate a person injured by that product if the product is defective.

But what is a defect?

Product Liability Law

- State-of-the-Art is a valid defense
- Failing to use State-of-the-Art technology can be considered a defect
- Cost vs. benefit considered
- Meeting codes and standards is not a defense

State-of-the-Art: No better design alternative existed

River to Sea Crash Analysis Report, 9/27/17

Rear-End Crashes 2011-2015

- Volusia County: 15,655
- Flagler County: 1,838
- 28% of all crashes
- Increase of 168% over the five-year period

State-of-the-Art Technology Solutions will Help

Automatic Emergency Braking (AEB) standard feature across almost all models by 2022

Embry-Riddle Systems on Display



EcoCAR



RobotX “Minion”



Autonomous Hybrid
Escape “Plan B”



2016 ERAU Camaro EcoSuperSport

0-60: 4.9s

Horsepower: 360hp

Torque: 650ft-lbs

Economy: 57mpg

Electric Range: 40mi

Minion Research Platform

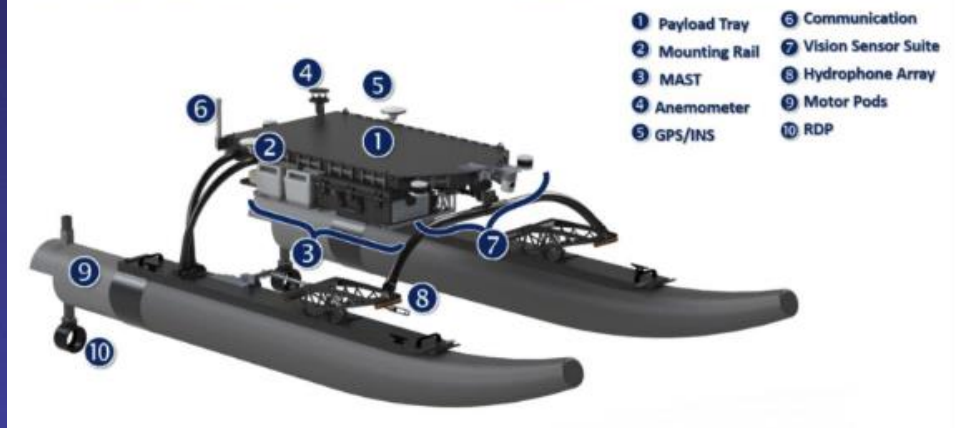


Research Topics

- Situational Awareness
- Hybrid Energy Systems

Applications

- Port Surveillance
- Endurance Missions
- Bridge Inspection

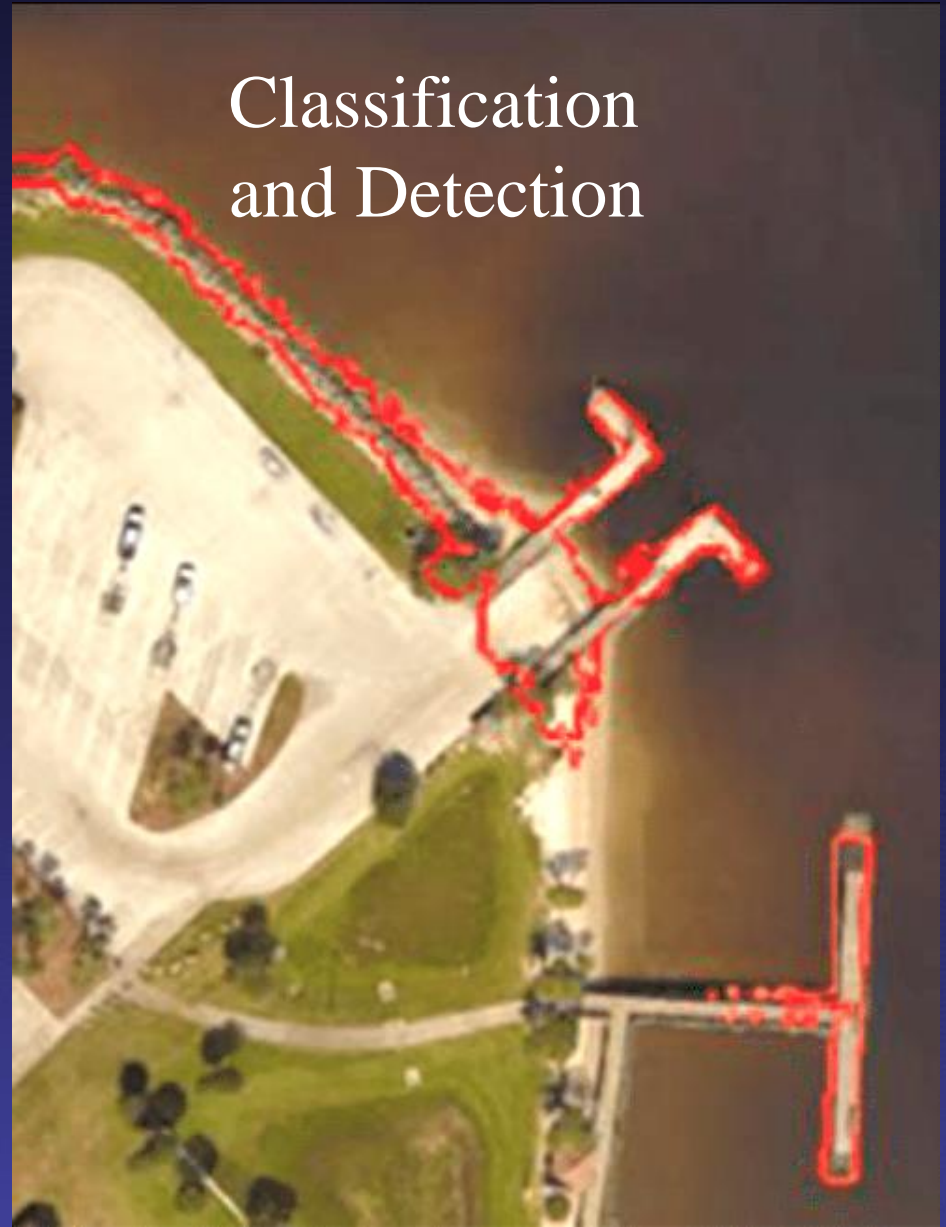


Minion Research Platform

Deep Learning
Approach
to Computer Vision



Classification
and Detection



EMBRY-RIDDLE
Aeronautical University

Autonomous Systems to Improve Airport Safety, Security and Compliance

Objective: develop automated system for inspecting:

- Fence Integrity (FAR 139.335)
- Wildlife Incursions (FAR 139.337)
- Paved Areas (FAR 139.305)



Autonomous Security Patrol

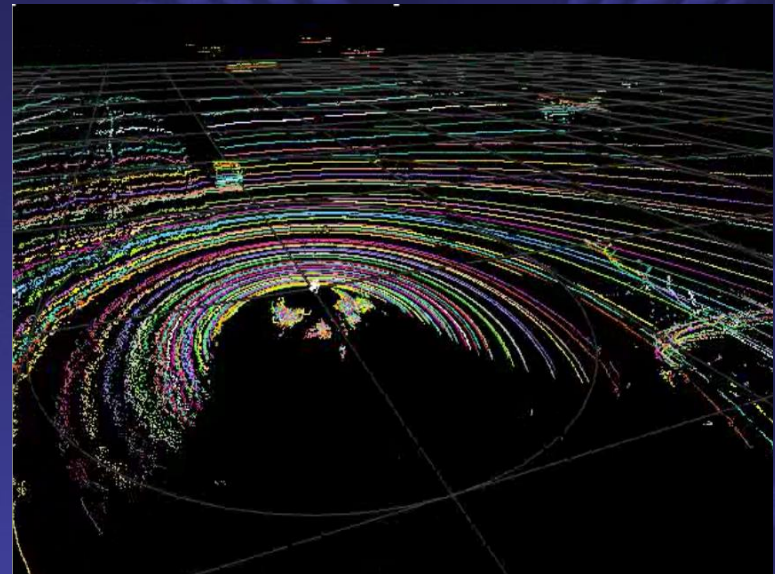
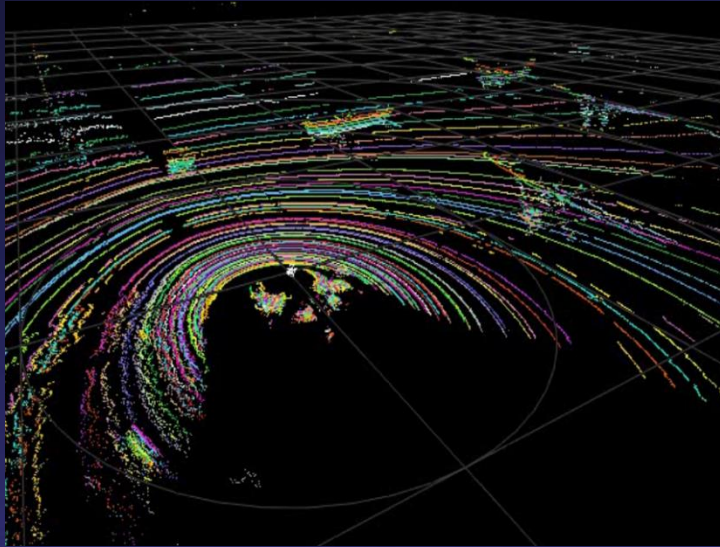


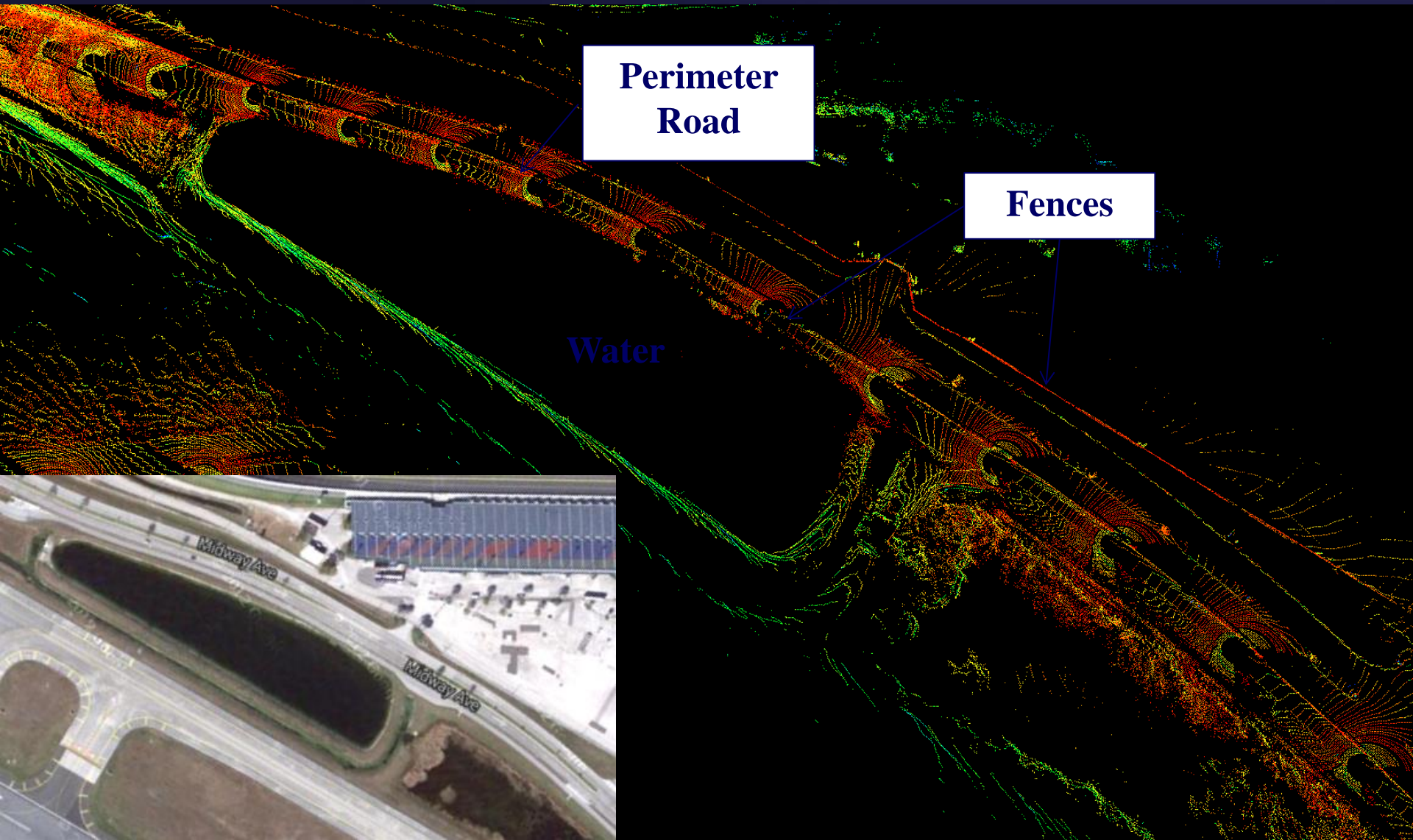
Autonomous Hybrid Ford Escape



Autonomous Demo, August 9, 2013
Distance Traveled: 1.48 miles

Velodyne Laser Scanner Data





Thanks

