Machine Learning and Our Cities

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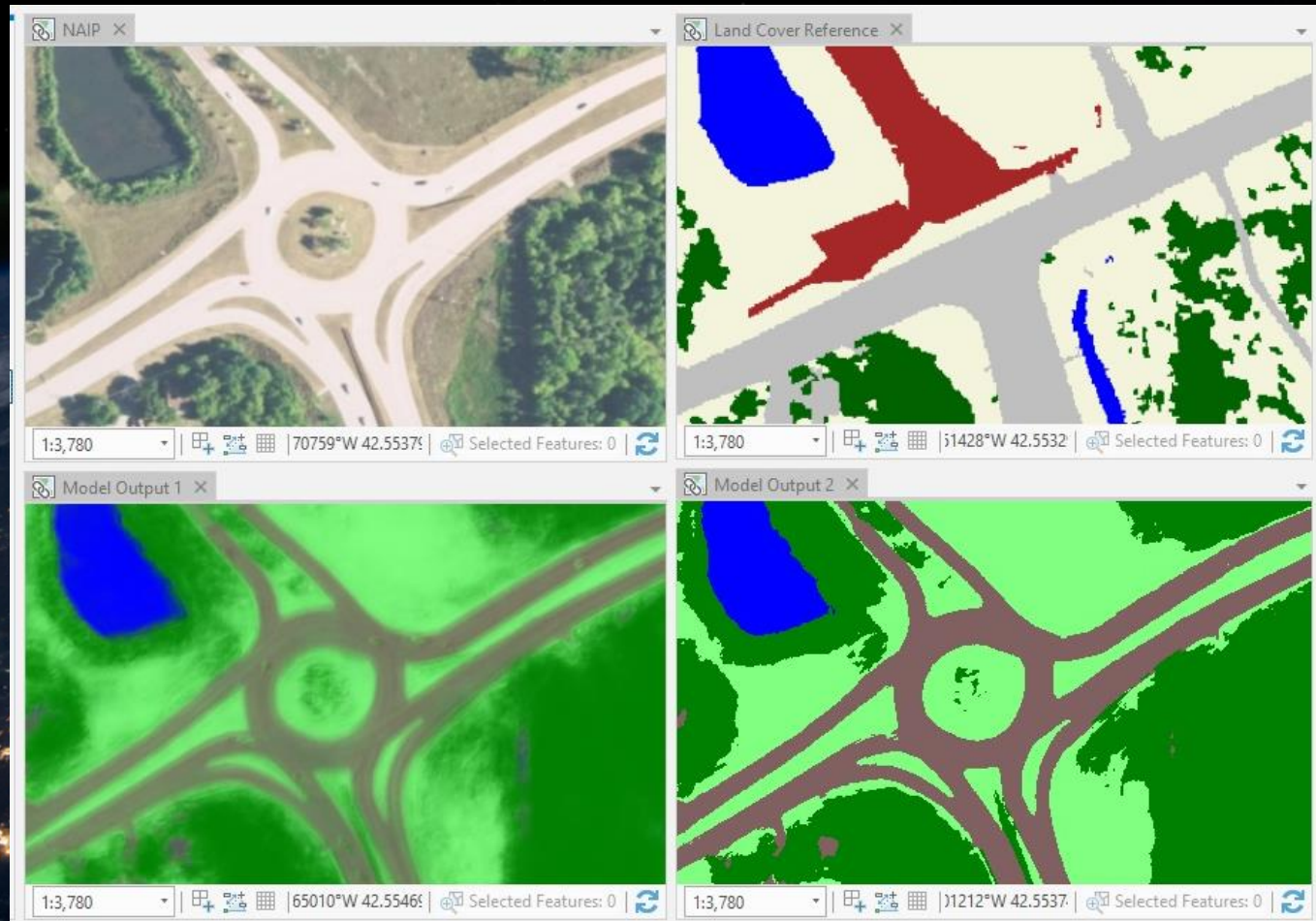
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AI for Good

AI for Earth

AI for
Accessibility

AI for
Humanitarian Action

Land Classification Model in Action

Aerial photo
1m resolution, input data

Existing land cover map
Created 7 years ago, out of date

Land classification model
Show mix of probabilities across land cover types

Land classification model
Classifying on the fly, and detects new roundabout

Oakland, Michigan

SPUR

Credit: Anna Kuperberg

📍 United States

Vision Zero

Creating Safer Streets Through Data Science

April 2017

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Objectives

- Partner with New York, Seattle, New Orleans, and Microsoft to explore **how data science can help the Vision Zero movement,** which aims to reduce traffic-related deaths and severe injuries to zero
- Help **New York City's Department of Transportation** improve traffic safety on its streets by understanding what existing safety interventions are working and where there is potential for improvement so the city can better allocate resources
- Inform **Seattle's Department of Transportation's** Bicycle and Pedestrian Safety Analysis to

Finding a Path to Zero

Video Analytics Towards Vision Zero

By Franz Loewenherz, Victor Bahl, Ph.D., and Yinhai Wang, Ph.D.

For young people below the age of 35, motor vehicle crashes are the leading cause of death in the United States. In 2015, collisions resulted in 35,092 deaths and 2.4 million injuries. More than 1,100 children under the age of 15 were killed. The 7.2 percent increase in traffic fatalities from 2014 to 2015 represents the greatest percentage increase in nearly 50 years.[1] Yet despite the massive death toll, work to prevent traffic fatalities has been woefully lacking.

Many governmental agencies continue to rely on traditional traffic safety approaches. They intervene only after enough police crash reports are filed to trigger a High Crash Corridor designation. This reactive approach to preventing crash recurrence has well-documented limitations:

- At most locations, the number of crashes is very small and subject to chance variations;
- Not all crashes are reported and the level of reporting is uneven regarding the type of road users involved, the exact location, and the severity of injuries;
- Numerous "close calls" go undocumented; and
- Many years of crash data are typically required to develop an understanding of the situation.[2]

what is one of the leading causes of death worldwide.[3] It calls on government agencies to be proactive, identify risks, and take steps to prevent injuries on our roadways. Vision Zero encourages us to imagine a future in which we do not need to wait for crashes to occur in order to prevent others from happening.[4]

Solutions for a Safer World

Although traffic collisions are largely preventable, the lack of early warning systems that could signal high-risk conditions or events at specific roadway locations (e.g., a pedestrian steps into a car abruptly, a motorist runs a red light and nearly strikes a pedestrian stepping off the curb, or a cyclist swerves as a car passes by another)...
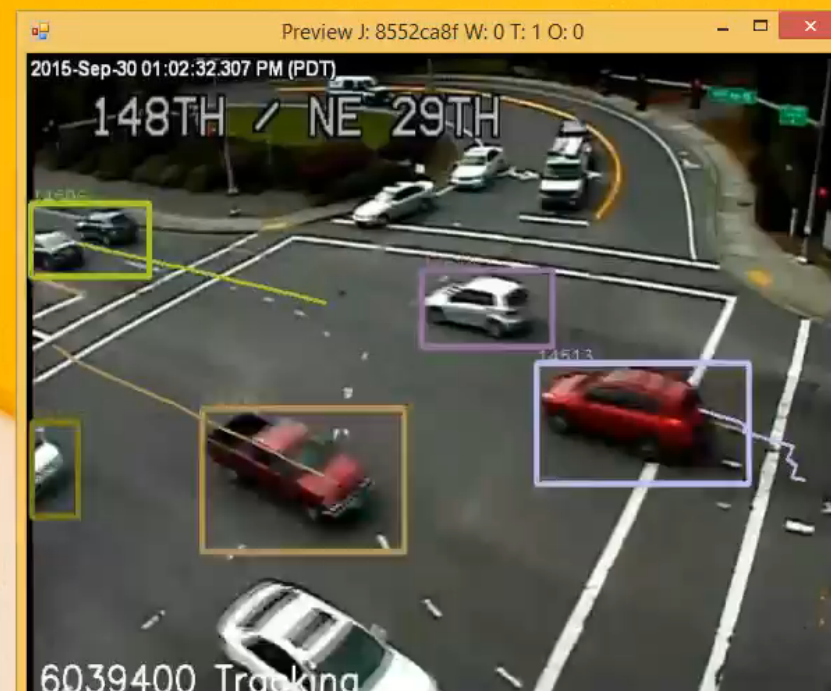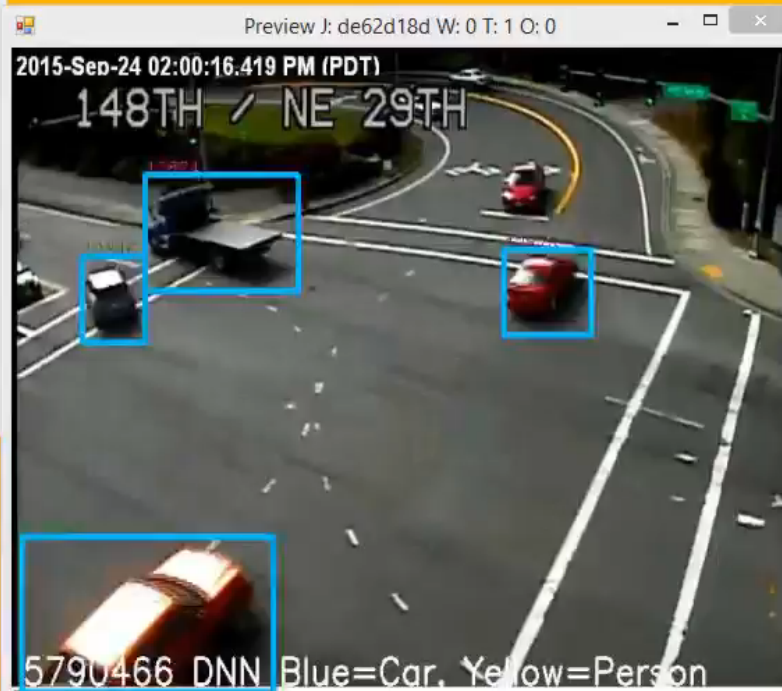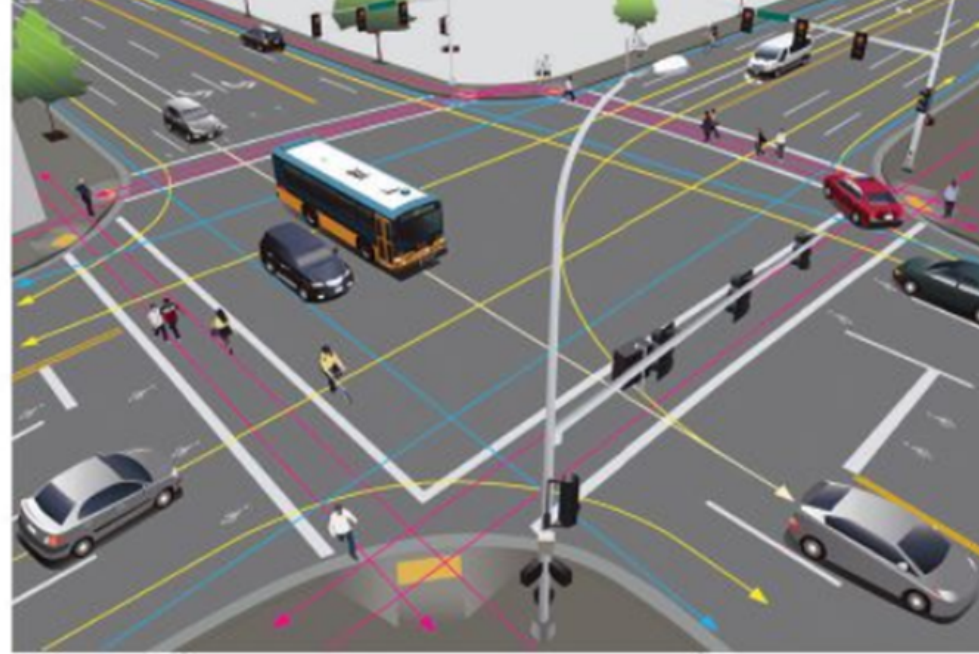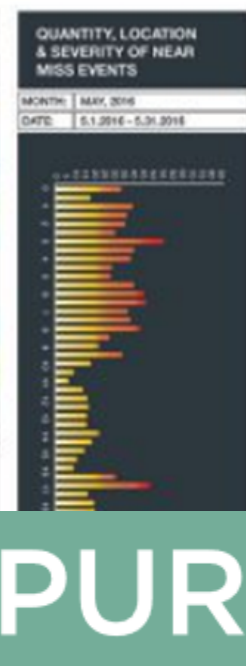
Figure 1.

Figure 2.

Finally: 20 second on why AVs are a long way off

"Does your car have any idea why my car pulled it over?"

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Thank you

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