



Video Analytics Towards Vision Zero Partnership











 cascade
BICYCLE CLUB

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RE
S.M.A

Video Analytics towards Vision Zero

Worldwide problems demands bold action



- Worldwide 1.25 million people are killed annually in traffic accidents
- In 2016, road crashes resulted in 40,000 deaths and 4.6 million injuries in the United States.
- Crashes are preventable and we need not wait for someone to be killed or injured before we take action

Make a difference, teach computers to learn

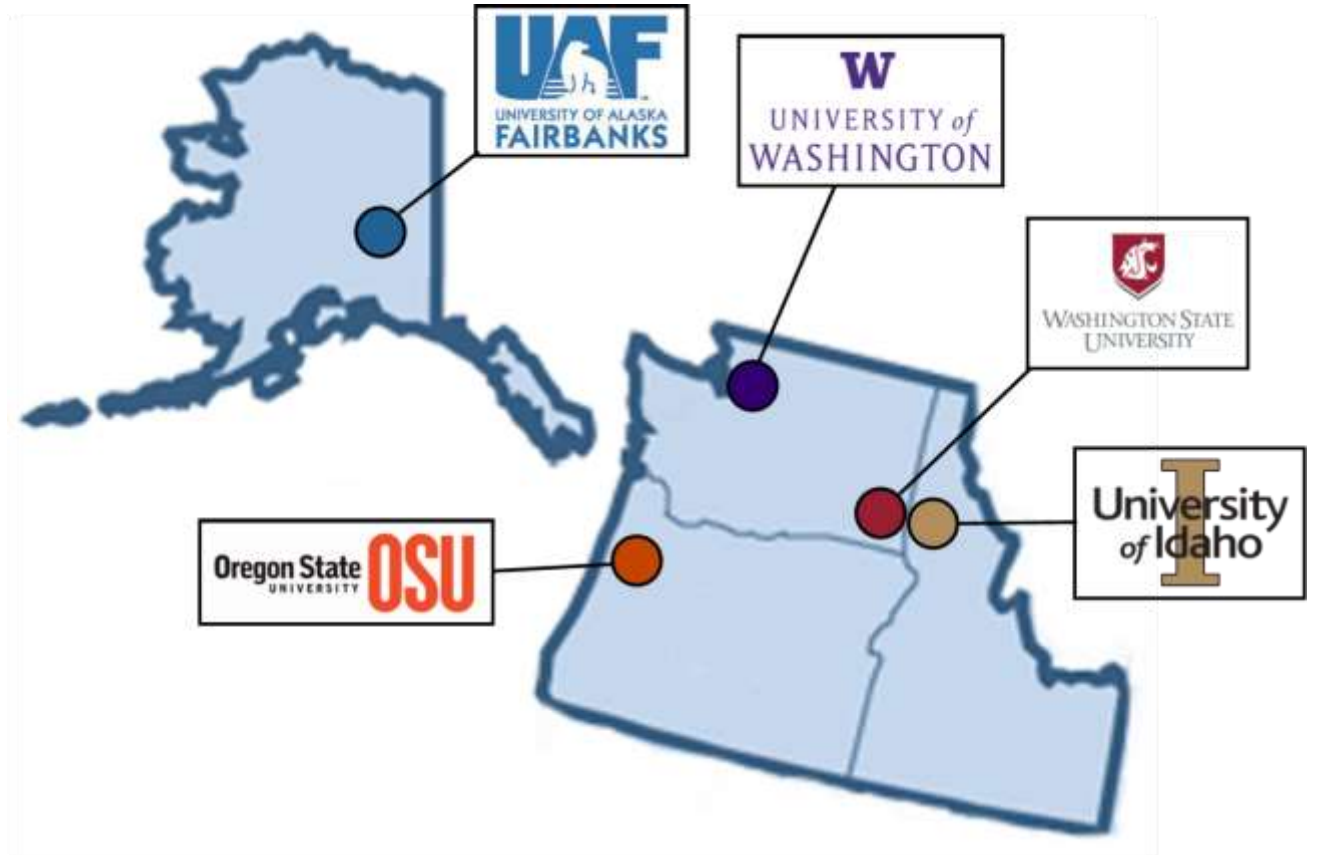


- Unique opportunity to help prevent traffic crashes and save lives
- "Teach" our computers how to recognize vehicles, people walking and bicyclists
- Cities will be able to rapidly detect road conflicts and traffic engineers can then take preventative action to avoid crashes

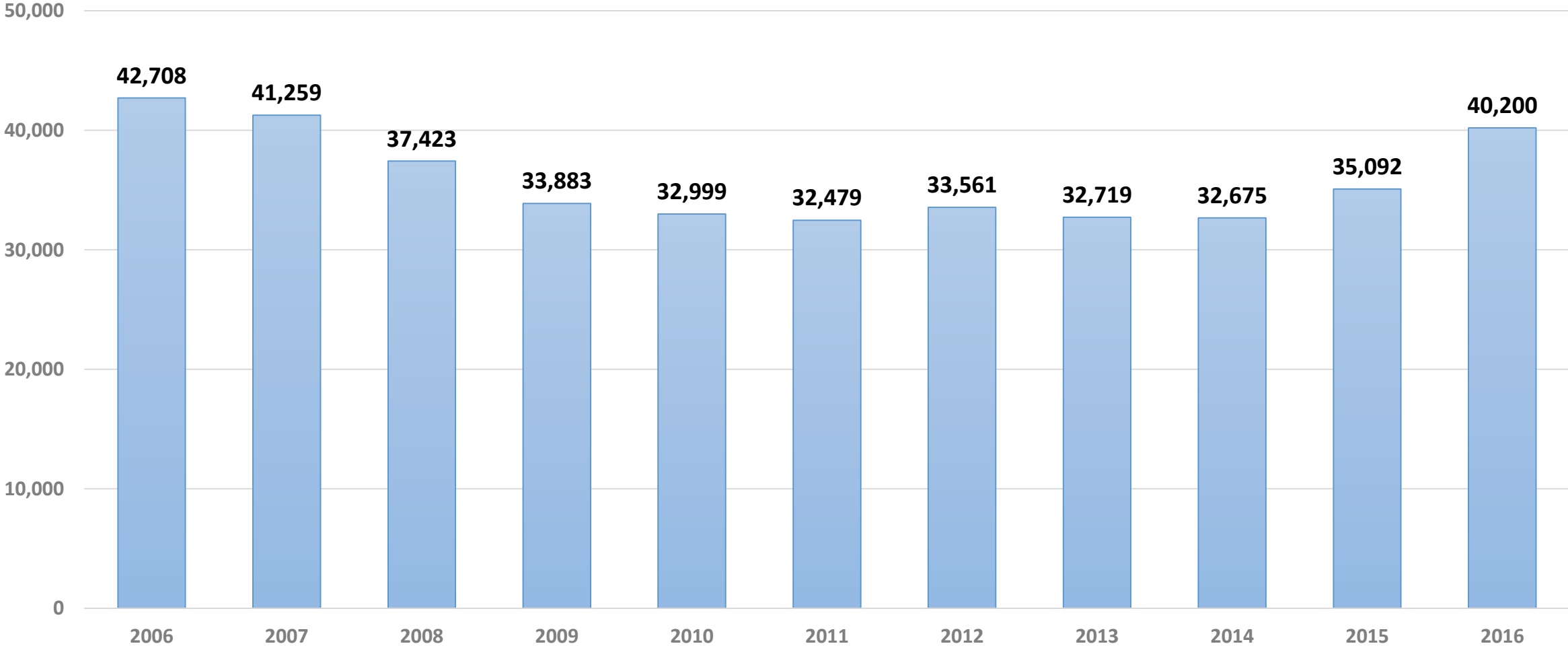
Participate starting June 

W

UNIVERSITY *of* WASHINGTON



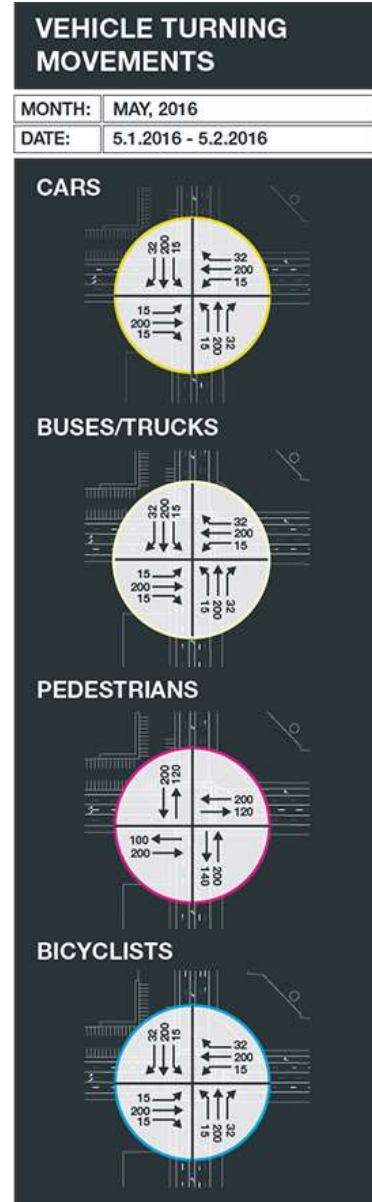
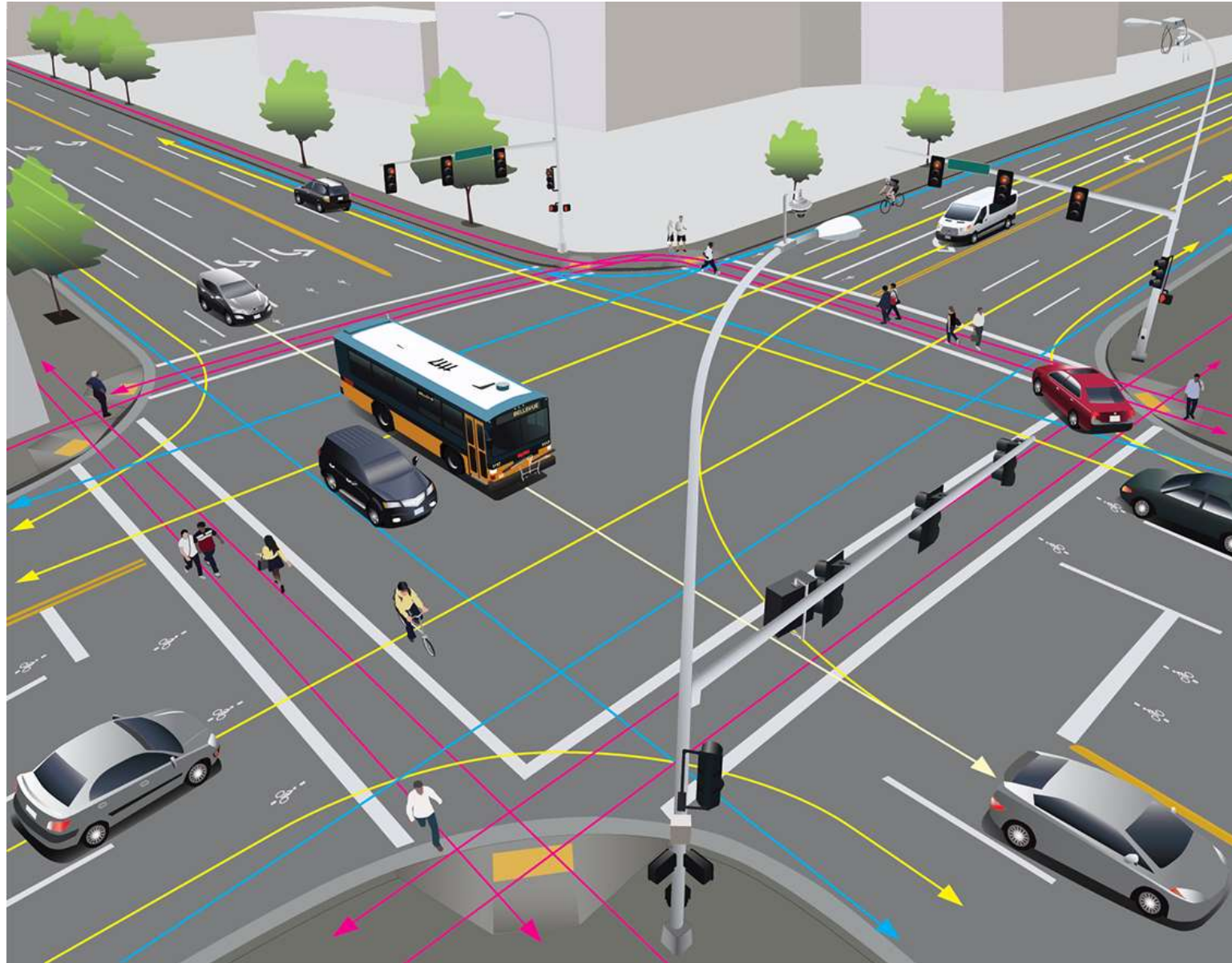
USA: Traffic Fatalities



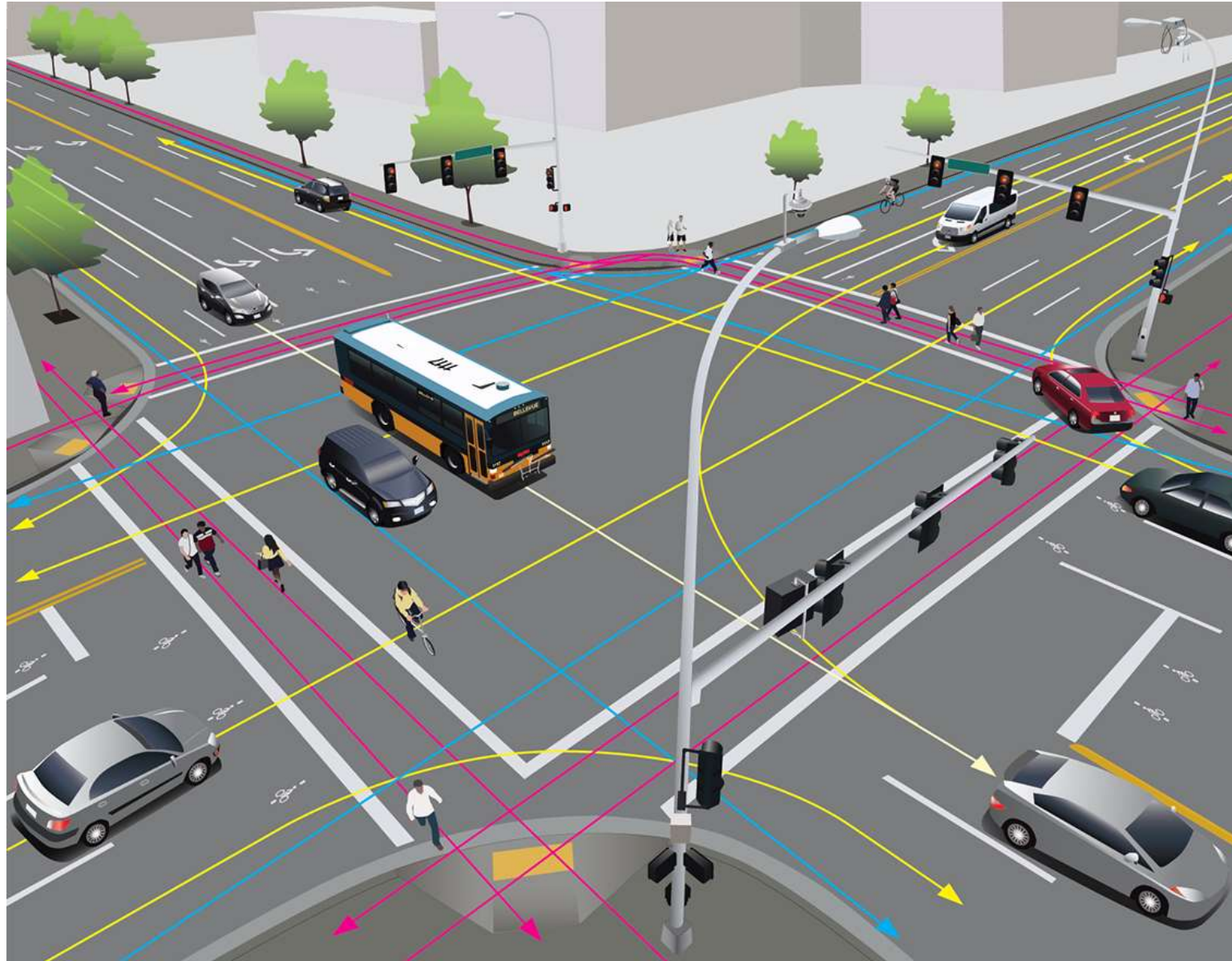


Microsoft

Trajectory Detection & Turning Movement Counts



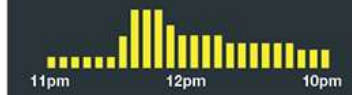
Volume Charts



VEHICLE DISTRIBUTION CHARTS BY TIME OF DAY

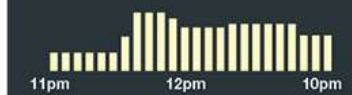
MONTH: MAY, 2016
DATE: 5.1.2016 - 5.1.2016

CARS



30,000 cars/day

BUSES/TRUCKS



400 buses & trucks/day

PEDESTRIANS



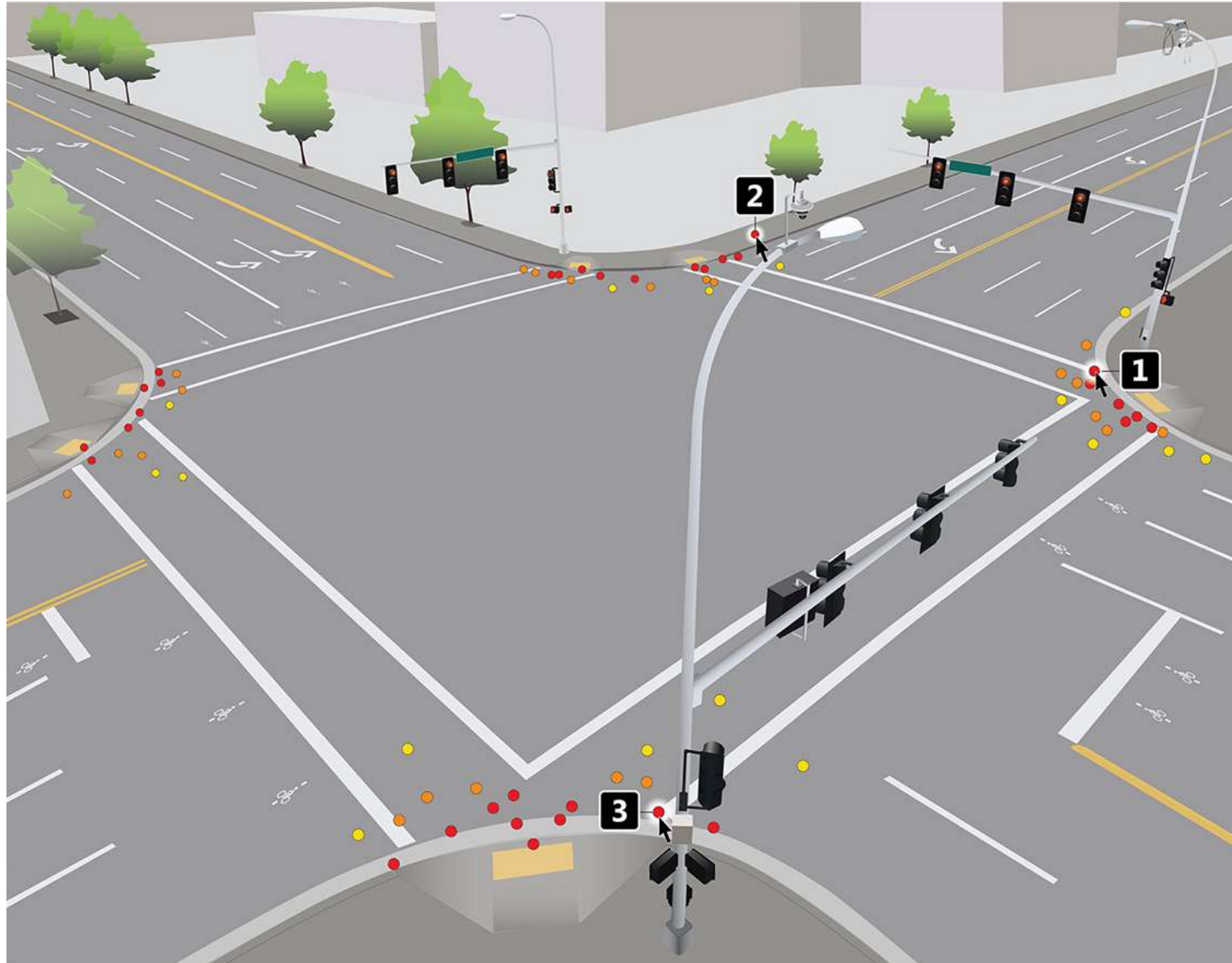
1,000 pedestrians/day

BICYCLISTS



100 bikes/day

Near-Miss Detection



QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS

MONTH:	MAY, 2016
DATE:	5.1.2016 - 5.31.2016

1

05/02/2016
!?

00:20/02:40

2

05/12/2016
\$#*%&

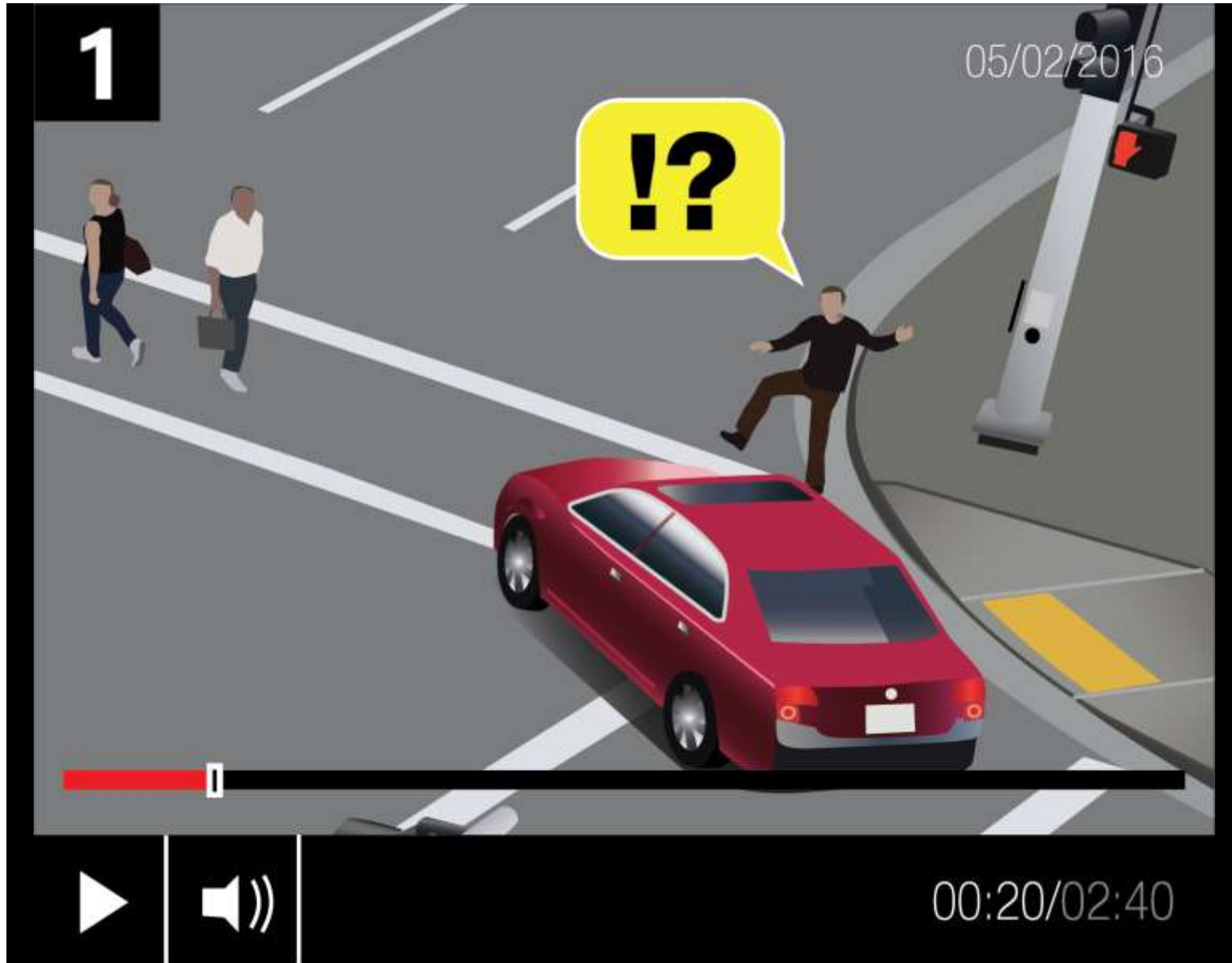
00:07/02:40

3

05/19/2016
!

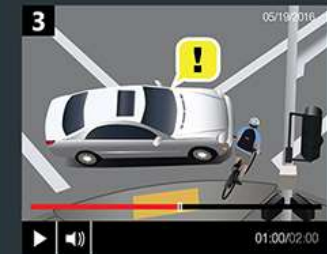
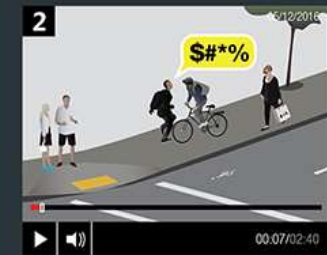
01:00/02:00

Near-Miss Detection

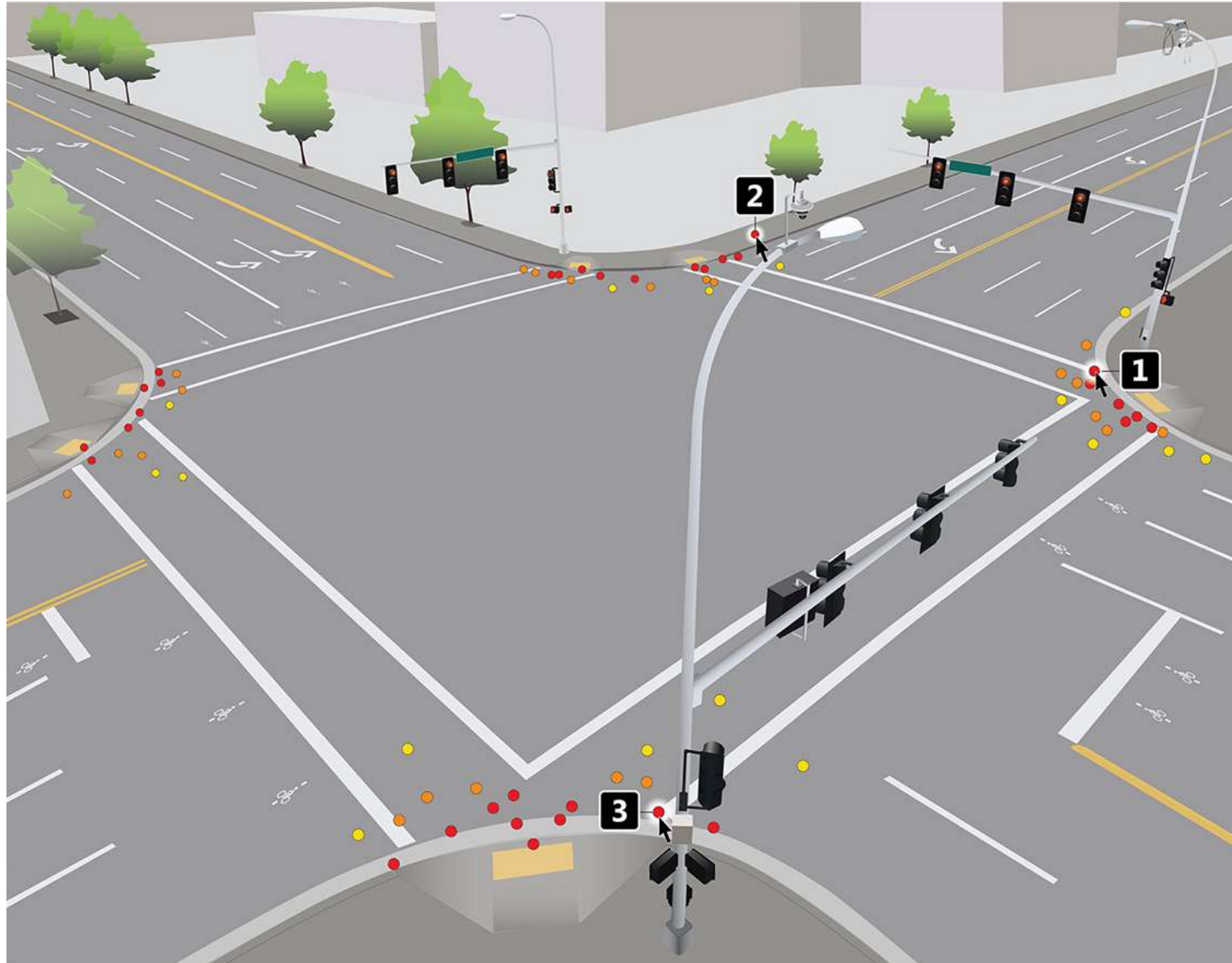


QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS

MONTH:	MAY, 2016
DATE:	5.1.2016 - 5.31.2016

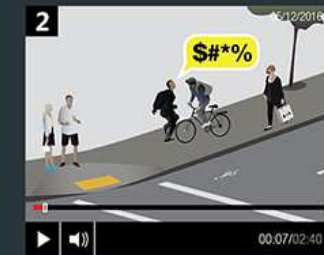


Near-Miss Detection



QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS

MONTH: MAY, 2016
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Near-Miss Detection



QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS

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1

05/12/2016

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00:20/02:40

2

05/12/2016

\$#*%!

00:07/02:40

3

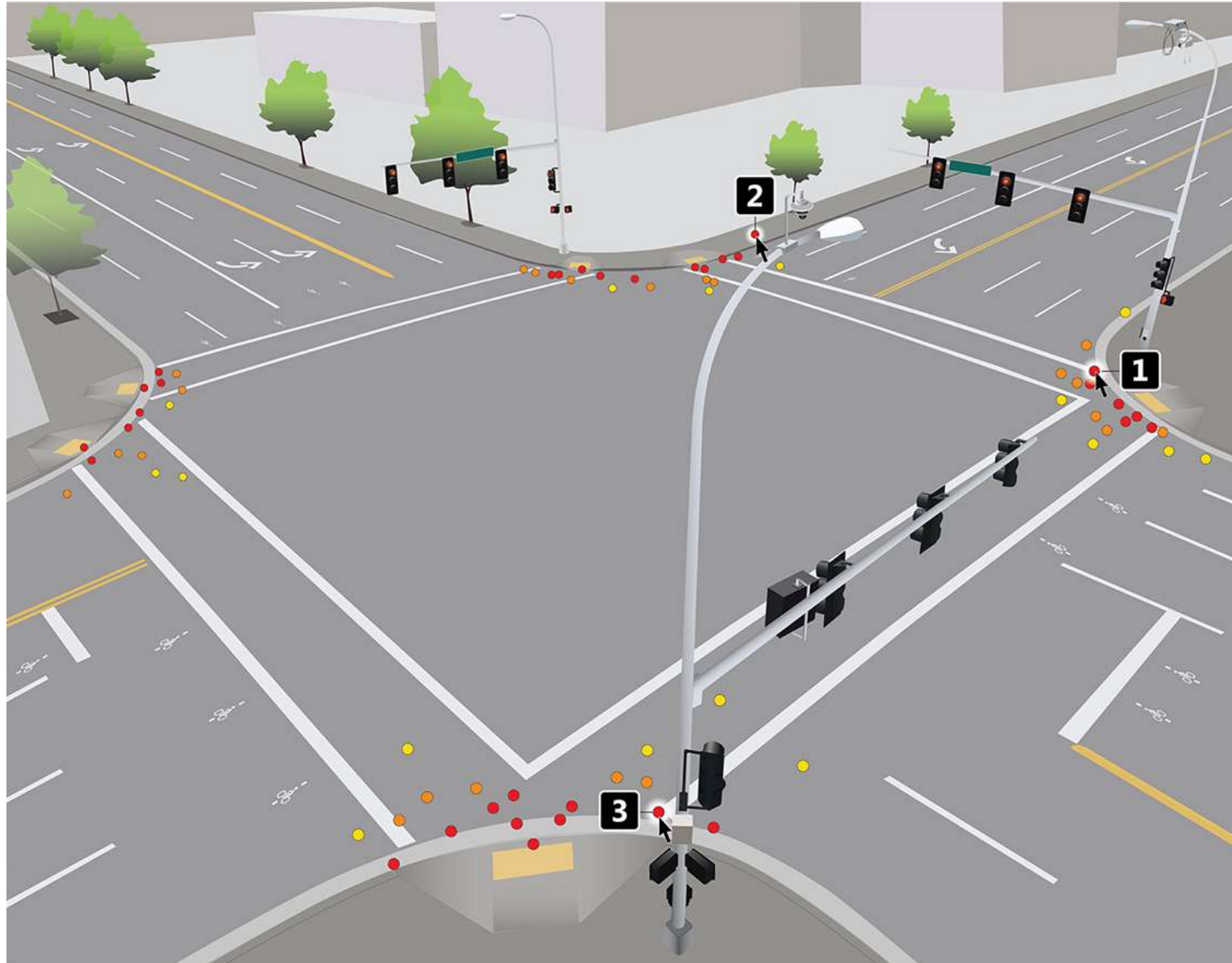
05/19/2016

!

01:00/02:00

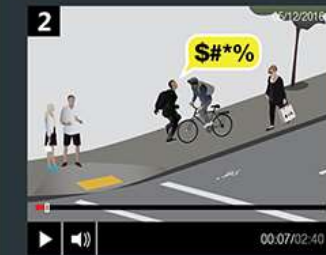
The right sidebar contains a table with the title "QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS". The table has two rows: "MONTH: MAY, 2016" and "DATE: 5.1.2016 - 5.31.2016". Below the table are three video thumbnails. Thumbnail 1 shows a red car and a pedestrian with a yellow speech bubble containing "!?". Thumbnail 2 shows a cyclist and a pedestrian with a yellow speech bubble containing "\$#*%!". Thumbnail 3 shows a white van and a cyclist with a yellow speech bubble containing "!". Each thumbnail includes a video player interface with a play button, a volume icon, and a progress bar.

Near-Miss Detection



QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS

MONTH: MAY, 2016
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Near-Miss Detection



QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS

MONTH:	MAY, 2016
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1

!?

05/12/2016

00:20/02:40

2

\$#*%&

05/12/2016

00:07/02:40

3

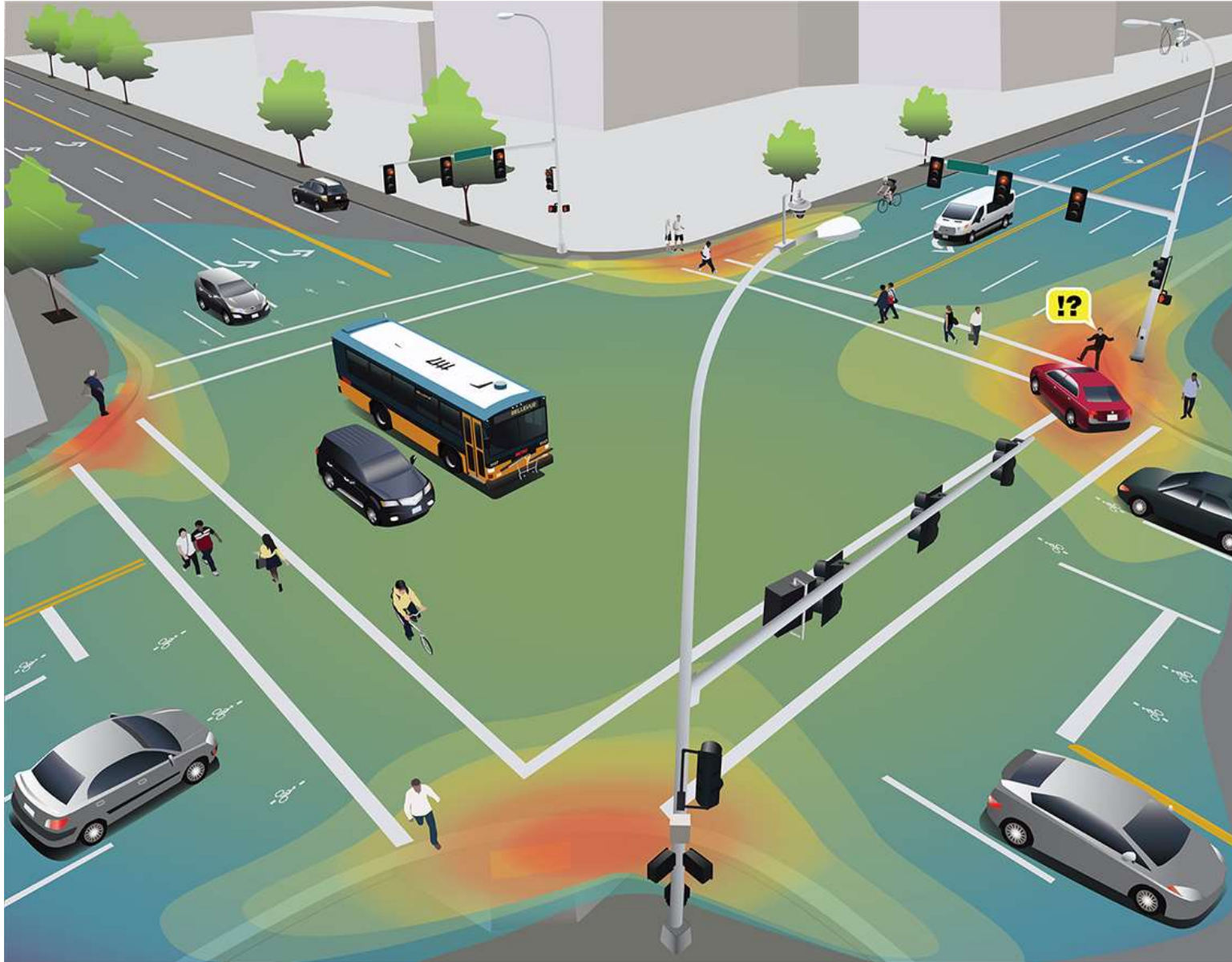
!

05/19/2016

01:00/02:00

The right sidebar contains a summary table and three video thumbnails. The table shows the number of near-miss events for May 2016, covering the period from May 1st to May 31st. The thumbnails provide a quick overview of different near-miss scenarios: a red car and a pedestrian (Thumbnail 1), a cyclist and a pedestrian (Thumbnail 2), and a white van and a cyclist (Thumbnail 3). Each thumbnail includes a play button, a volume icon, and a progress bar.

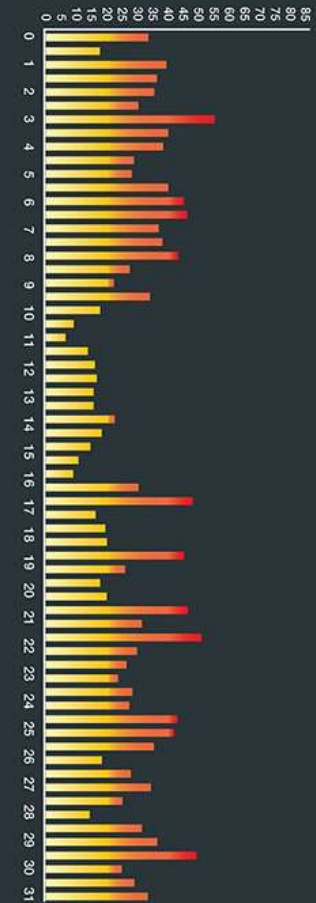
Near-Miss Detection



QUANTITY, LOCATION & SEVERITY OF NEAR MISS EVENTS

MONTH: MAY, 2016

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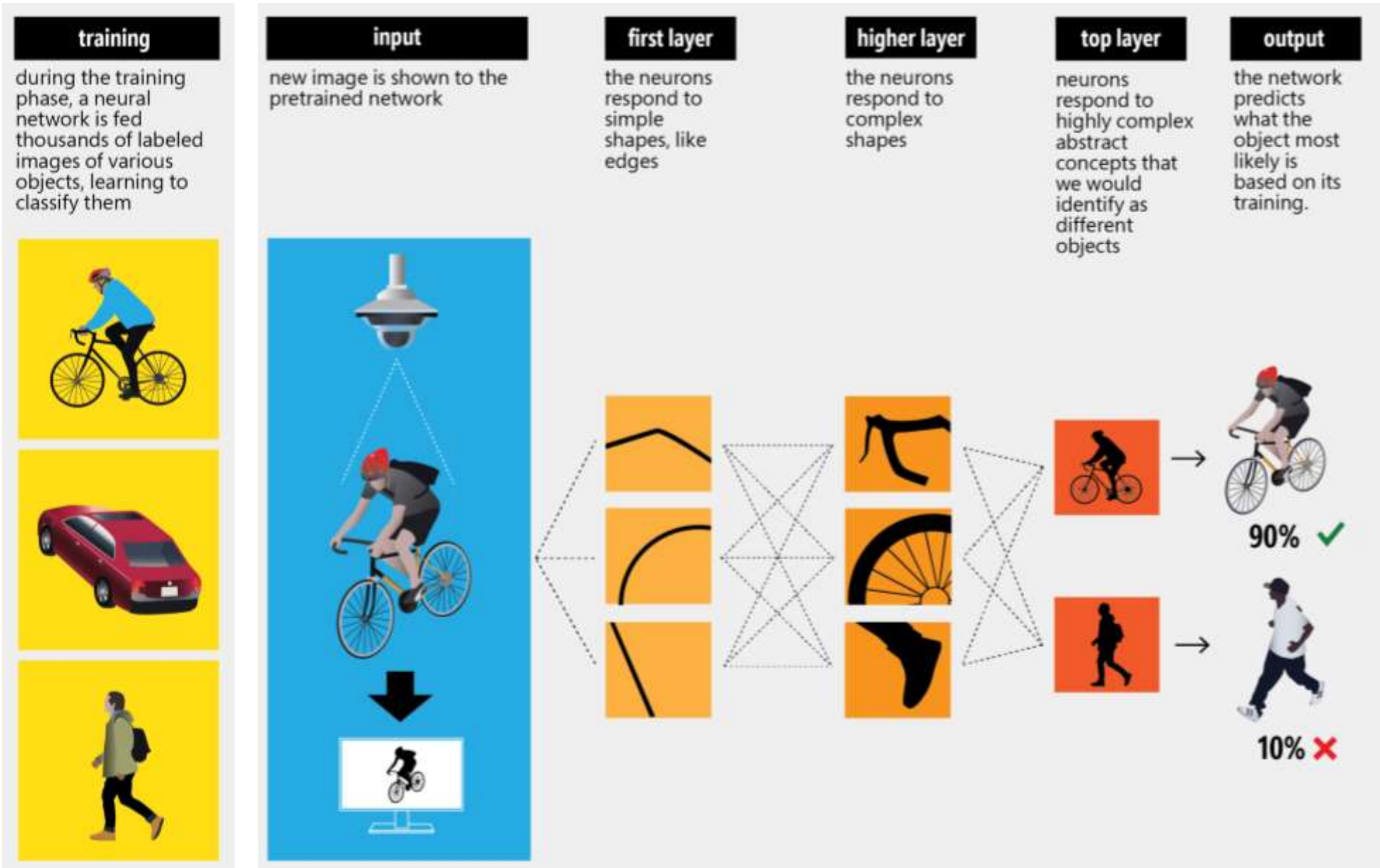
Object Detection



PEDESTRIAN, BIKE AND VEHICLE DETECTION

-  Cars
-  Buses/trucks
-  Pedestrians
-  Bicyclists

How Neural Networks Work



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