# NUMINA

Real-time insights from streets


**CONTACT**

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@heycty // @digitizdat

# We make cities **responsive**.

Numina delivers real-time activity data to

**plan more equitable & efficient streets**,

**trigger on-demand services**, and

**A/B test the built environment.**

# What you see…

# What Numina sees…

12+ pedestrians

1 bicyclist

1 wheelchair

1 delivery truck

#5L Fulton Ltd bus

#71 Haight / Noriega bus

2 utility vehicles

2 green lights

# What Numina sees…

**12+ pedestrians** 4+ at bus stop
1 at SE corner

**1 bicyclist** in bike lane

**1 wheelchair**

**1 delivery truck** parked

**#5L Fulton Ltd bus** southbound

**#71 Haight / Noriega bus** southbound at stop

**2 utility vehicles** parked

**2 green lights**

# What Numina sees…

**12+ pedestrians** 4+ at bus stop boarding
1 at SE corner waiting

**1 bicyclist** in bike lane 12mph

**1 wheelchair**

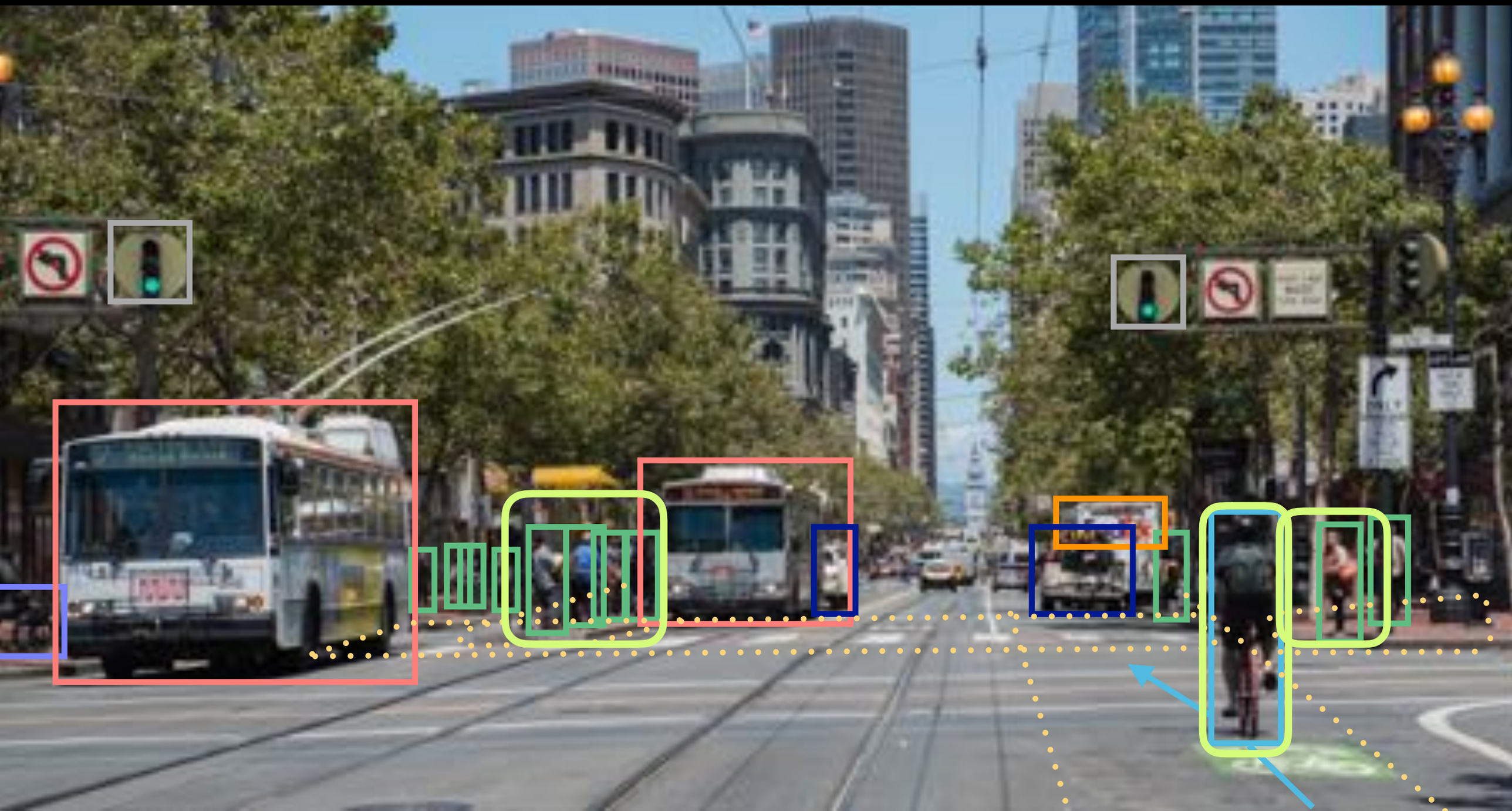
**1 delivery truck** parked

**#5L Fulton Ltd bus** southbound

**#71 Haight / Noriega bus** southbound at stop

**2 utility vehicles** parked

**2 green lights**



NUMINA'S UNIQUE FEATURES

# Pop up anywhere

# Process data on-board

# Measure *anything you can see*

The Florida Times-Union
jacksonville.com

Posted November 16, 2016 04:57 pm

By Dan Scanlan
dan.scanlan@jacksonville.com

# Deadly stretch of New Kings Road coined 'Danger Zone' after 4 pedestrian deaths in 1 week

2 Comments 30 Share

Lt. J. Paris of the Jacksonville Sheriff's Office holds an off-site roll call in a parking lot along New Kings Road last week with

In Jacksonville!

# Timeline

**Early 2016** — COJ + HPC apply for RWJF program

**May 2016** — Technology for Healthy Communities app due

**Late June 2016** — Numina Selection (3 companies of 216 apps)

**Late October 2016** — Final. Official. Project Approval.

**Oct. 31- Nov. 4, 2016** — Sensor installation

**January 2017** — First data delivery

**April 2017** — First assessment & publication

**EXPANSION PLANNING**

## KEY INGREDIENTS

**Planning**

*identify need*

**Funding**

*allocate resources*

**Implementation**

*execute!*

Health 2.0

Knight Foundation

CLINTON FOUNDATION

Robert Wood Johnson Foundation

# Urban Innovation checklist

- ☐ Clearly defined problem; buy-in for chosen solution
- ☐ Invested stakeholder organizations
  - ☐ Internal champions and project owners
- ☐ Interdepartmental collaboration
  - ☐ Good communication tools & protocols
- ☐ KPIs and definition for project “success”
- ☐ Plan for long-term expansion or sustainability
- ☐ Patience, Passion, Persistence

# THANK YOU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JAX project objectives

## 1. Baseline bike/ped data

to prioritize intersection safety based on usage

- The City does not have basic info on street usage.
- Numina data will help them identify highest-impact sites for redesign.

## 2. A/B test redesigns

using tactical urbanism approaches to infrastructure

- Compare interventions using a tactical urbanism approach.
- Deploy “pop-up” infrastructure to vet investment opportunities.

## 3. Assess permanent interventions

for long-term awareness of impact and responsiveness

- Report whether or not chosen infrastructure has intended effect.
- Empower the City to iterate on improvements on an ongoing basis.

# Heat Maps

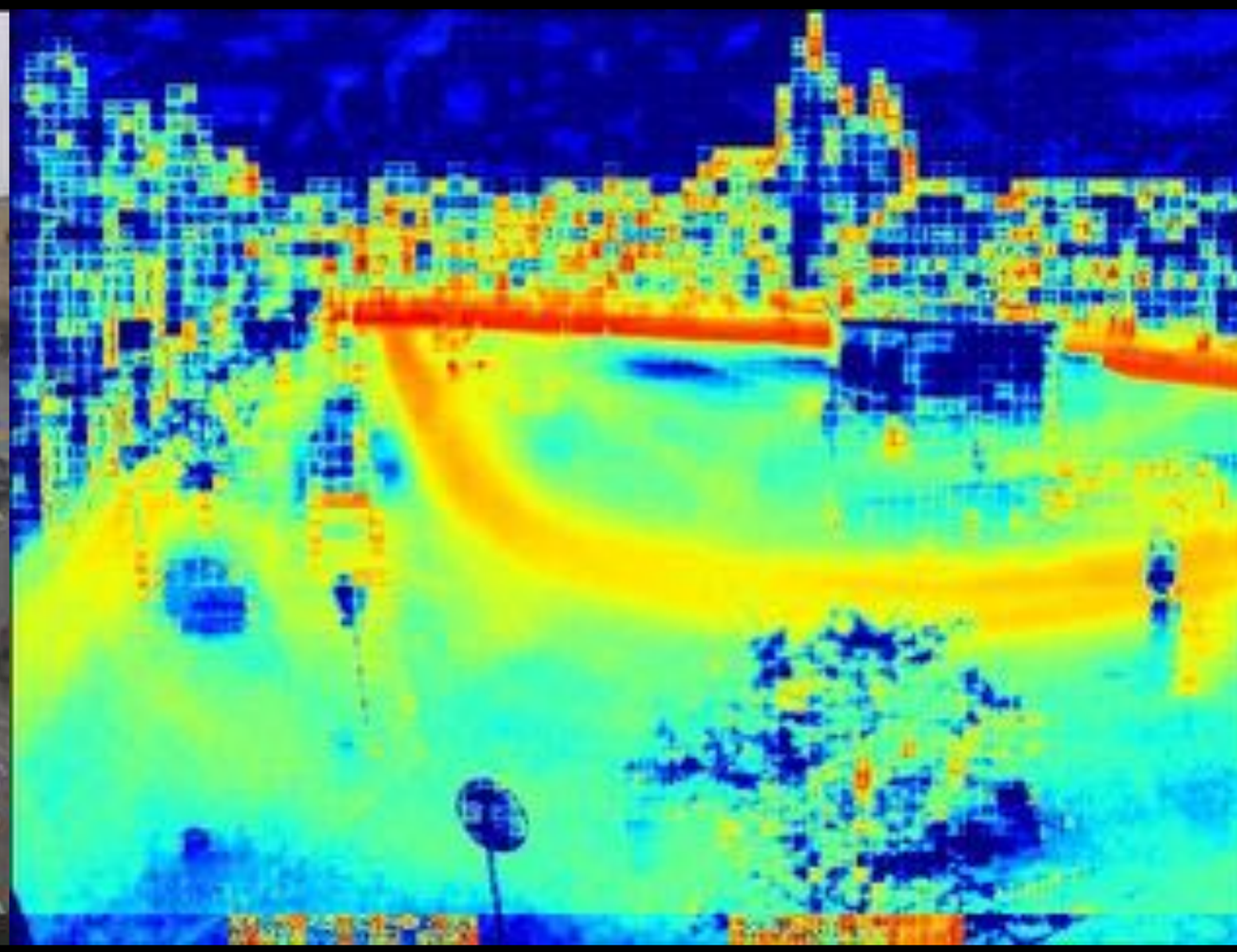
Object behaviors,
not just counts

# LOST

**Welcome to The Longterm Observation of Scenes with Tracks Dataset**

The LOST Dataset comprises videos taken from streaming outdoor webcams, capturing the same half hour each day. Data collection started in June of 2010 and continues to this day. LOST contains rich metadata, including geolocation, object detections, and tracking results.

To date, we have captured 16,009 videos, for a total of 155,029,134 frames and 727 Gb of compressed video data. Watching it all would take over 258 days, 2 hours, and 24 minutes. Processing this data has given us 434,046,047 object detections and 1,243,475 tracks.



MORE AT: HTTP://LOST.CSE.WUSTL.EDU/

Who we are

Tara Pham

CEO

Martin McGreal

CTO

**urban design** + **machine learning**

public health + urban planning

Next City Vanguard

machine learning, DevOps, + security

18 years in Fortune 100 innovation offices

## Our founders

+ have worked together since 2014, after both were hit by vehicles while riding their bikes
+ won a $50k hackathon
+ bootstrapped the development of a computer-vision sensor deployed in major cities!

## Team

Paul de Konkoly Thege

**Operations**

previously **Boeing Ventures, Venture for America**

Zach Teed

**Computer Vision**

previously **Sandia National Labs**

Dean Di Pietro

**Hardware**

previously **OXO**,

23 yrs. in product design

Who's with us

## Advisors

Robert Pless, PhD

George Washington University

Chair of Computer Science,
Computer vision expert

Frank Vallese, PhD

ePhysics Technologies

CEO for 25 years,
EE & sensor expert

## Investors

URBAN-X

MINI

SOSV

## Funders*

Knight Foundation

Robert Wood Johnson Foundation

CLINTON FOUNDATION

Health 2.0

*non-dilutive