Automated Vehicles
The Global Status Report released by WHO this year, confirms that road traffic injuries are still a big global health and development problem.

1.2 million people die in road accidents every year.

A further 50 million are injured.
The Investments

• Intel purchasing Mobileye for $15.3 billion
  • Dwarfs prior AV investments
  • MobileEye is at the component/system level, not the vehicle control level
• Ford purchases a majority share of Argo AI for $1B
• Otto is purchased by Uber for $680M
• GM purchased Cruise Automation for $1B
  • after investing $500M in Lyft
• Volkswagen invests $300M in Gett (Uber rival)
• Apple pumps $1B into DiDi
• nuTonomy closed on $16M funding in 2016 and closing on "multiples of $16M in 1H2017"
• Optimus Ride closed on $5.25M funding
The Taxonomy
Testing in Massachusetts

- nuTonomy
  - Self-driving taxi cabs in Singapore
  - +200 miles in Ray Flynn Industrial Park
  - Renault Zoes and Mitsubishi i-MiEVs
  - Approval for expanded area
- Optimus Ride
  - Testing at Perkins School
  - Parallel autonomy & level 4
- Delphi - applied
- Navya - applied
Regulations

States with Enacted Autonomous Vehicle Legislation

LEGEND
Enacted
Executive Order

mass robotics
Data Sharing

The coming flood of data in autonomous vehicles:
- Radar: ~10-100 KB per second
- Sonar: ~10-100 KB per second
- GPS: ~50 KB per second
- Cameras: ~20-40 MB per second
- LiDAR: ~10-70 MB per second

Autonomous vehicles: 4,000 GB per day... each day.
Challenges to Adoption

- Human behavior and local traffic idiosyncrasies
- Liability and auto insurance
- Varying business models
- Impact on state & local revenue
- VMTs – increasing or decreasing?
- Technology
  - Improved localization - centimeter accuracy
  - Disrupted GNSS positioning
  - Varying road conditions – not miles but experiences