the past
1894… the world’s first “horseless carriages” race, Paris to Rouen.
the present
the future
Robocar - the world's first autonomous racing car
competitions in the most extreme environments
RACE TRACKS & FREEWAYS
competitions for all vehicle classes
ROBOT CARS
ROBOT TAXIS
competitions that fuse the real and virtual together
eSPORTS ARENAS
VIRTUAL GAMES

PLACE 11 OF 24

CURRENT LAP 00:45.578

PRESS ① TO REWIND
IN REAL-LIFE GAMES
rethinking MIT’s DeepTraffic & Risk Level Sets
Deep Traffic
Deep Reinforcement Learning Competition

Name:
Lex Fridman

Highest Average Speed:
69.38 mph

Highest Ranking:
5 out of 1,871
On Jan 19, 2017 with 68.97 mph

Current Ranking:
2,276 out of 22,687
On Jan 08, 2018 with 69.38 mph

Sensing:
- Side Sensing: 3
- Forward Sensing: 30
- Backward Sensing: 10
- Temporal Window: 0

Network Architecture:
- Layers: 3
- Parameters: 11,445

Learning Parameters:
- Training Iteration: 10,000
- Momentum: 0.0
- Batch Size: 64
- L2 Decay: 0.01
- Learning Rate: 0.001

Reinforcement Learning:
- Experience Size: 3,000
- Gamma: 0.7
- Number of Intelligent Cars: 10
A more aggressive driver chooses a higher risk threshold, and has a larger planning space
artificial intelligence in motorsport
extreme environments that push technology beyond human limits
and then what?
transfer those innovations to human driven cars
why?
Top ten causes of death among people aged 15–29 years, 2012

- Road Traffic Injuries: 340,000
- Suicide: 255,000
- HIV/AIDS: 220,000
- Homicide: 200,000

WHO: GLOBAL STATUS REPORT ON ROAD SAFETY 2015
“By 2030, on current trends, another 1.3 million global road deaths, this gives us another 14 million by 2030.”

–Matthew Baldwin, European Road Safety Coordinator
“By 2030, it will be the 5th largest cause of death, up there with cancer, heart disease.”

—Matthew Baldwin, European Road Safety Coordinator
human + machine
DevBot 2.0 the world’s first human robotic prototype race car
automated, augmented, assisted, adapted
automated = beyond acceptable human risk
augmented = parallel/shared autonomy
the greatest motorsport challenge?
One of the most complex racing environments in the world; 60 cars, four performance categories, 180 drivers, four skill levels, 380 laps of 13.626km, 38 corners, day & night, wet & dry for 24hrs.
AI enhanced driving experiences
risk versus reward
assisted = enhanced situational awareness
assisted = augmented reality
adapted = reimagining human control
beyond mechanical control
“When most people think about autonomous driving, they have a very impersonal vision of the future, where humans relinquish control to the machines. Yet B2V technology does the opposite”

– Nissan - Executive Vice President, Daniele Schillaci
automated, augmented, assisted, adapted