



APP-FREE CAR HAILING

hackaTUM 2018

OUR CHALLENGE

HOW CAN YOU HAIL A SELF-DRIVING CAR WITHOUT USING AN APP?

- » Consider elderly, those without a smartphone, or those that don't want to install an app.
- » Find a creative solution that might actually work!
 - » How does the car know who to pick up?
 - » How does the car know where to go?
 - » What sensor(s) does this car use?
 - » Where does the car stop? On the road? Can it find a safe parking spot?

WE CHALLENGE YOU TO BE CREATIVE!

- » Do **whatever** you can do **best**!
- » **Think** about all **possible modalities**:
computer vision, voice recognition,
physical buttons?
- » **Take into account** how people **without
a smartphone** would want to get a self-
driving taxi



- » We **don't** want to **restrict** you in one modality by providing data...
- » **Consider** image processing, processing LiDAR data, or building something physical
- » **Ask other people** to help with gathering training data...
- » **Enjoy snacks and drinks** in our workshop room ;)



WE CHALLENGE YOU TO HAVE FUN!



WE CHALLENGE YOU TO **LEARN!**

» Throughout the **hackaTUM** there are **several mentors** with machine learning experience, use them!

AID MENTORS



FELIX FRIEDMANN
TECH LEAD MACHINE
LEARNING



FRANCESCO FERRONI
MACHINE LEARNING



NASTARAN MATTES
AGILE COACH



ROLAND MEERTENS
MACHINE LEARNING



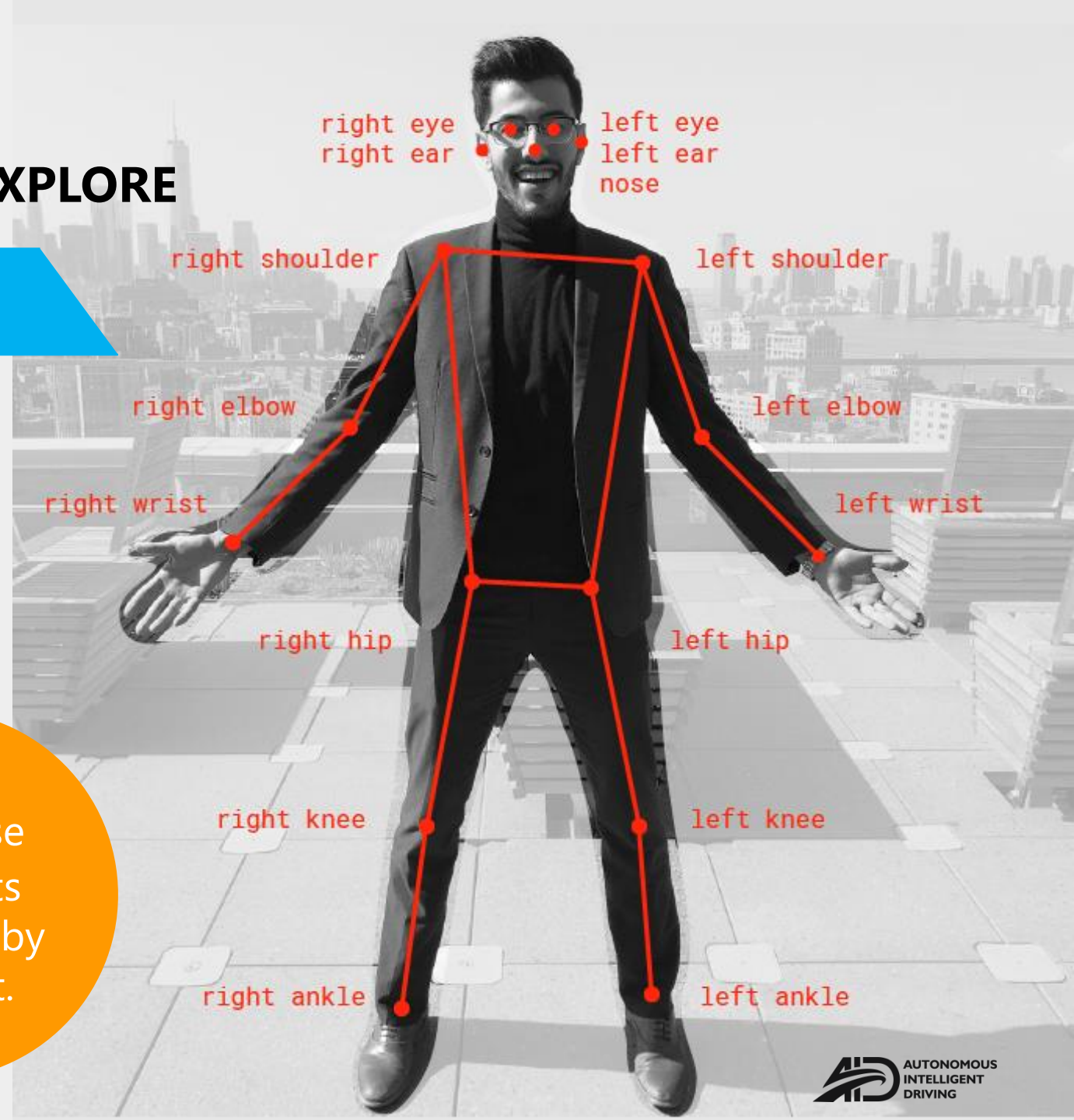
DMITRII KHIZBULLIN
PERCEPTION INTERFACE

EXAMPLES OF WHAT YOU COULD EXPLORE

USING NEURAL NETWORKS, AS THEY ARE PRETTY COOL

- » Estimate the poses of humans using PoseNet.
A pretrained neural network in TensorFlow that you can use with Javascript

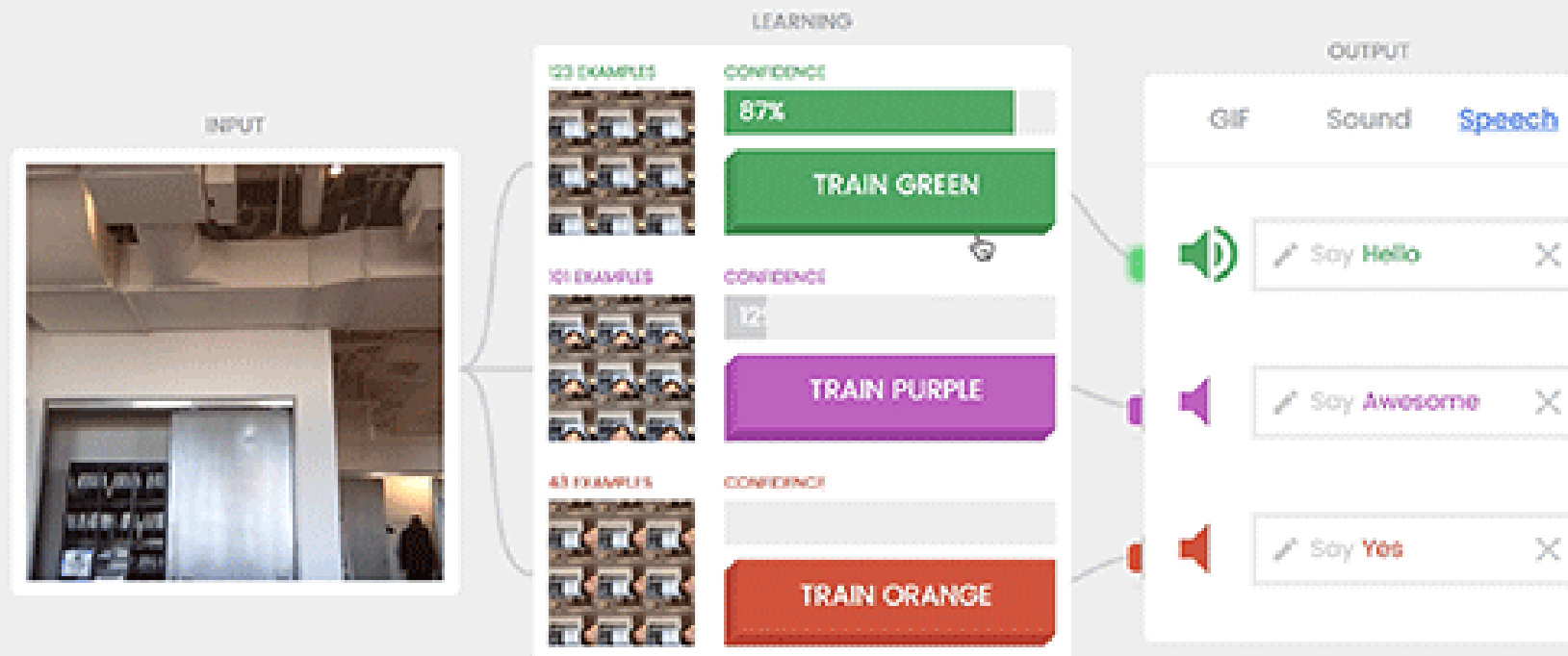
17 pose
keypoints
Returned by
PoseNet.



EXAMPLES OF WHAT YOU COULD EXPLORE

USING NEURAL NETWORKS, AS THEY ARE PRETTY COOL

» Use teachable machine to explore different "signs": <https://teachablemachine.withgoogle.com/>

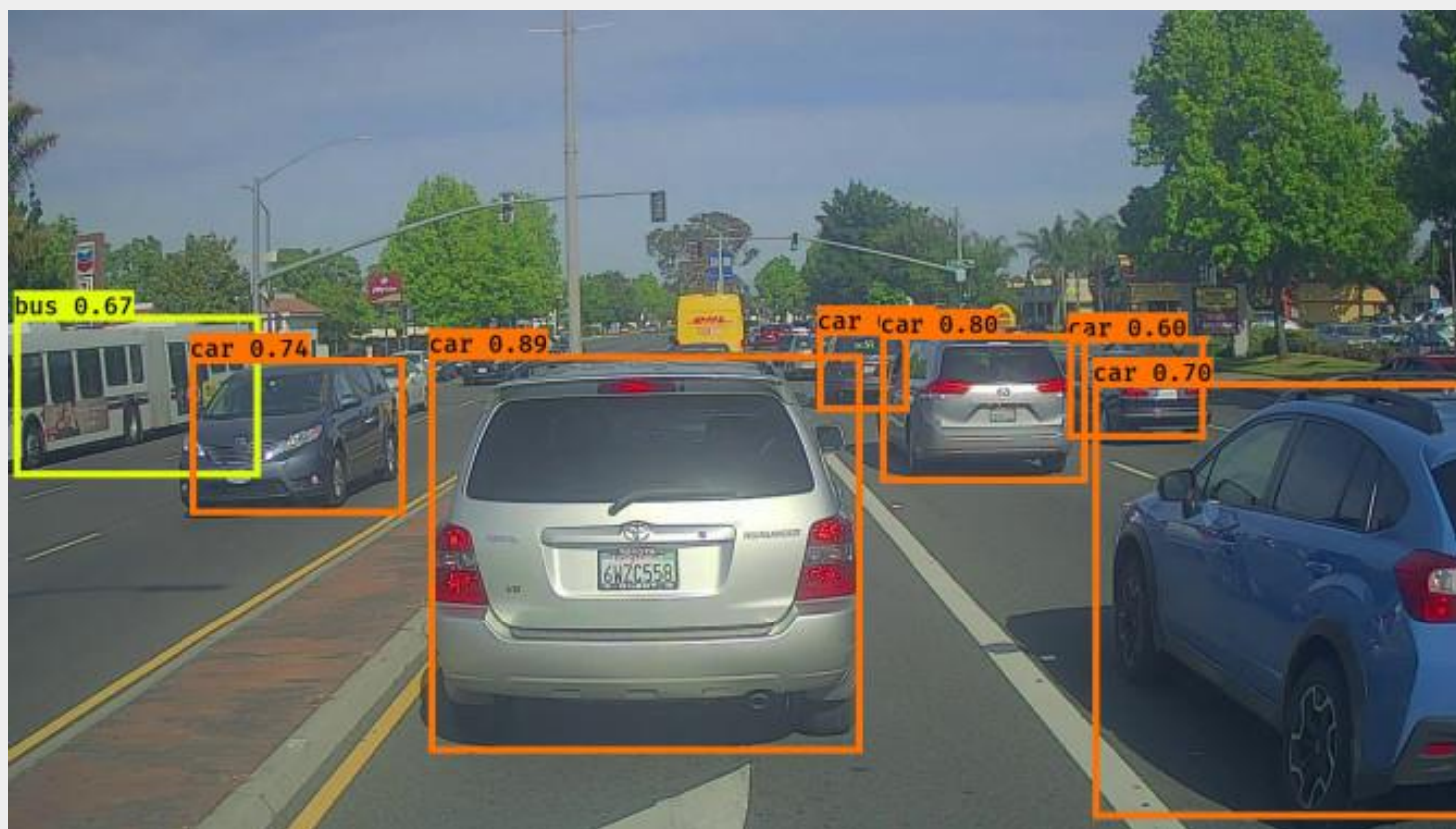


EXAMPLES OF WHAT YOU COULD EXPLORE

USING NEURAL NETWORKS, AS THEY ARE PRETTY COOL

» Train your own object detector with the TensorFlow object detection

API: https://github.com/tensorflow/models/tree/master/research/object_detection



OUR TIPS AND TRICKS

“Win as a team”:
combine the strong
points of every team
member to create a
winning solution!

... Things that work
during prototyping
tend to break
on stage :(
**Take time for
testing!**

**Think before
doing!**
First explore several
ideas before
committing
to a final goal.

Jury members are
easily impressed with
something that **works
on stage...**

OUR PRIZES

For the winners' team:

Each member of the team can choose a conference of their choice in Europe!

We pay travel, entrance fee, and hotel!

Feel free to ask us what conference **WE would go to ;)**

For the runner-up:

Amazon voucher of 100€ for each member of the team!

