

An aerial point cloud map of a city street grid. The map is rendered in grayscale, showing buildings, trees, and roads. Overlaid on the map are numerous colored lines (red, blue, green, purple, yellow) representing navigation paths or trajectories. These paths are mostly straight lines following the street grid, but some are curved, indicating turns. Small yellow triangles are placed along the paths, likely representing waypoints or sensor locations. The overall scene is a complex network of paths over a 3D point cloud environment.

Vision Meets Mapping

CVPR 2019 Tutorial, June 18 2019

Organizer: Xiang (Sean) Ma, Amazon

Organizer



Dr. Xiang (Sean) Ma

**CV & AI leader,
Amazon**

**Previously: Research
Manager II, HERE
Technologies**

Topics

- Vision-based Map Making
- Vision-based High Definition (HD) Map Making
- Crowd Sourced (Vision Based) Map Making
- Semantic Map
- Structural Map
- Vision-based Localization
- LIDAR-based Localization
- Multi-sensor-based Localization
- 2D/3D Scene Understanding and Location-based Reasoning
- 2D/3D Visual Landmark Detection

Tutorial website

- <https://visionmeetsmapping.github.io>
- Presentation slides and videos (if any and if sharable) would be shared through the website
- Please share your pictures/recordings to xiang.sean.ma@gmail.com

Invited Speakers



Dr. Raquel Urtasun

**Professor at Univ. of
Toronto;
Head of Uber ATG
Toronto**

Invited Speakers



Dr. Xiaofeng Ren

**Chief Scientist,
Amap (AutoNavi),
Alibaba**

Invited Speakers



Dr. Xin Chen

**Director of
Engineering, Highly
Automated Driving,
HERE Technologies**

Invited Speakers



Dr. Ben Kadlec

**Manager of
Engineering, Maps
and Computer Vision,
Uber ATG Boulder**

Invited Speakers



Dr. Peter Kotschieder

**Director of Research,
Mapillary**

Agenda

Time	Event
1:00pm – 1:05pm	Welcome and Introduction: Dr. Xiang (Sean) Ma , Amazon
1:05pm – 1:50pm	Invited Talk: Dr. Raquel Urtasun , Univ. of Toronto, Uber ATG Toronto Topic: Mapping for autonomous driving
1:50pm – 2:35pm	Invited Talk: Dr. Xiaofeng Ren , Amap (Autonavi) and Alibaba Topic: Mapping and Navigating in a Hectic World
2:35pm – 3:15pm	Invited Talk: Dr. Xin Chen , HERE Technologies Topic: HD Live Map for Automated Driving: Camera Meets LIDAR
3:15pm – 3:35pm	Break
3:35pm – 4:15pm	Invited Talk: Dr. Ben Kadlec , Uber ATG Boulder Topic: Computer Vision for HD Map Safety
4:15pm – 5:00pm	Invited Talk: Dr. Peter Kotschieder , Mapillary Topic: Recognition for Mapping on a Global Scale using Deep Learning and Computer Vision
5:00pm – 5:30pm	Panel Discussion and Conclusion