

TRUCKS WITH LASERS:

Mapping the Wilderness

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**Adaptive traction makes
easy work of any obstacle**



Eliminates wheel slip

Made
**NO
ROAD**

Speed
**4
kph**

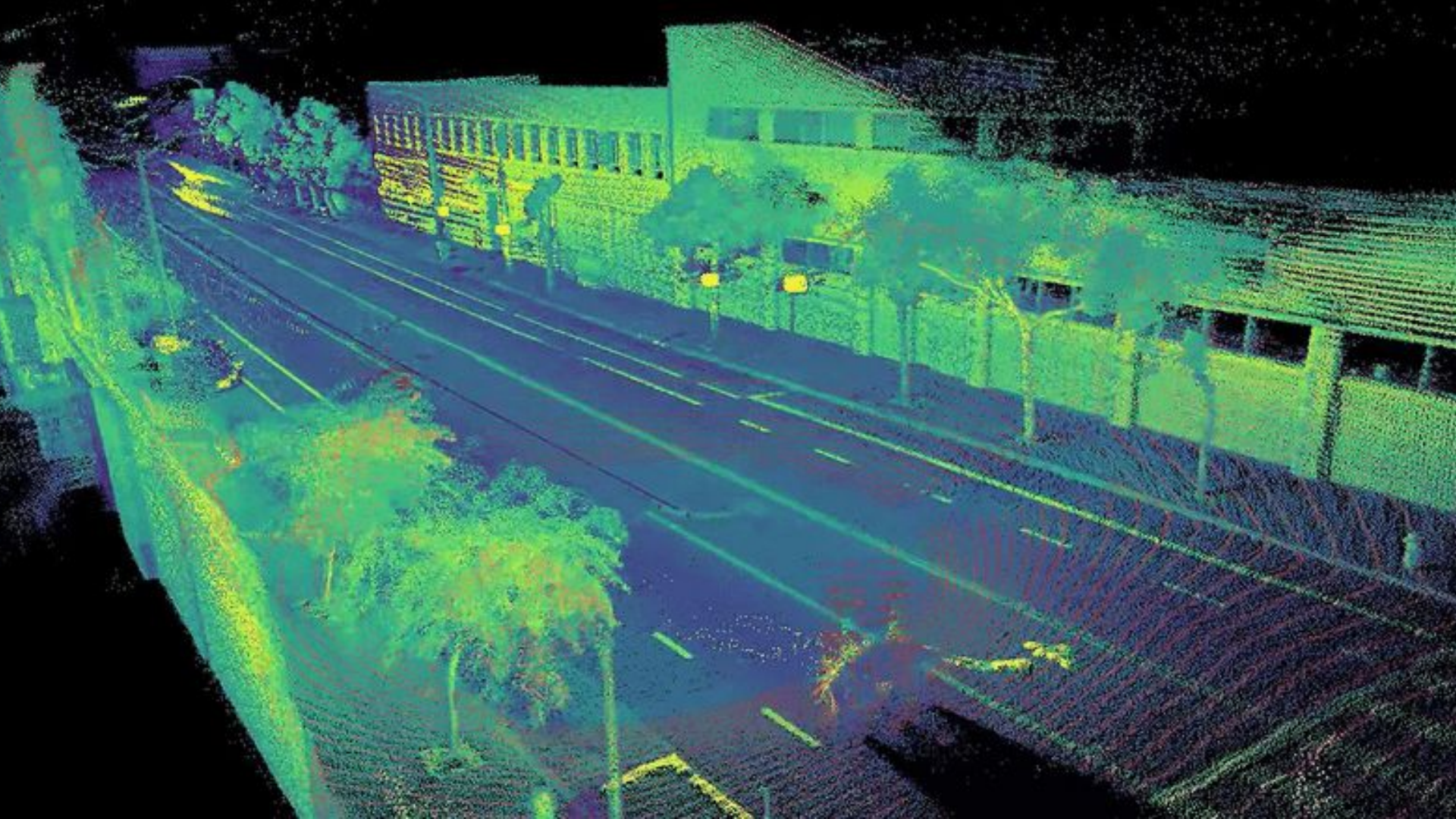
How might we?:

1. collect detailed 3D spatial data in wilderness settings
2. augment the driver's spatial awareness while operating the vehicle
3. Find new ways to visualize, analyze, interact, simulate with the data post-collection

A white autonomous vehicle, likely a Google Waymo Firefly, is shown from a side-front perspective. It features a prominent white LiDAR sensor mounted on its roof. The car is parked on a street with a brick building and a "PRIVATE PARKING" sign in the background. The image is overlaid with a dark semi-transparent layer to serve as a background for the text.

1. Inexpensive, compact LiDAR sensors

- **Light Detection And Ranging**
- Laser emits light pulses that bounce off objects, uses the time to return to sensor to determine distances
- Research and development in autonomous vehicles has increased the availability and ease-of-use of LiDAR





2. Open-source robotics software

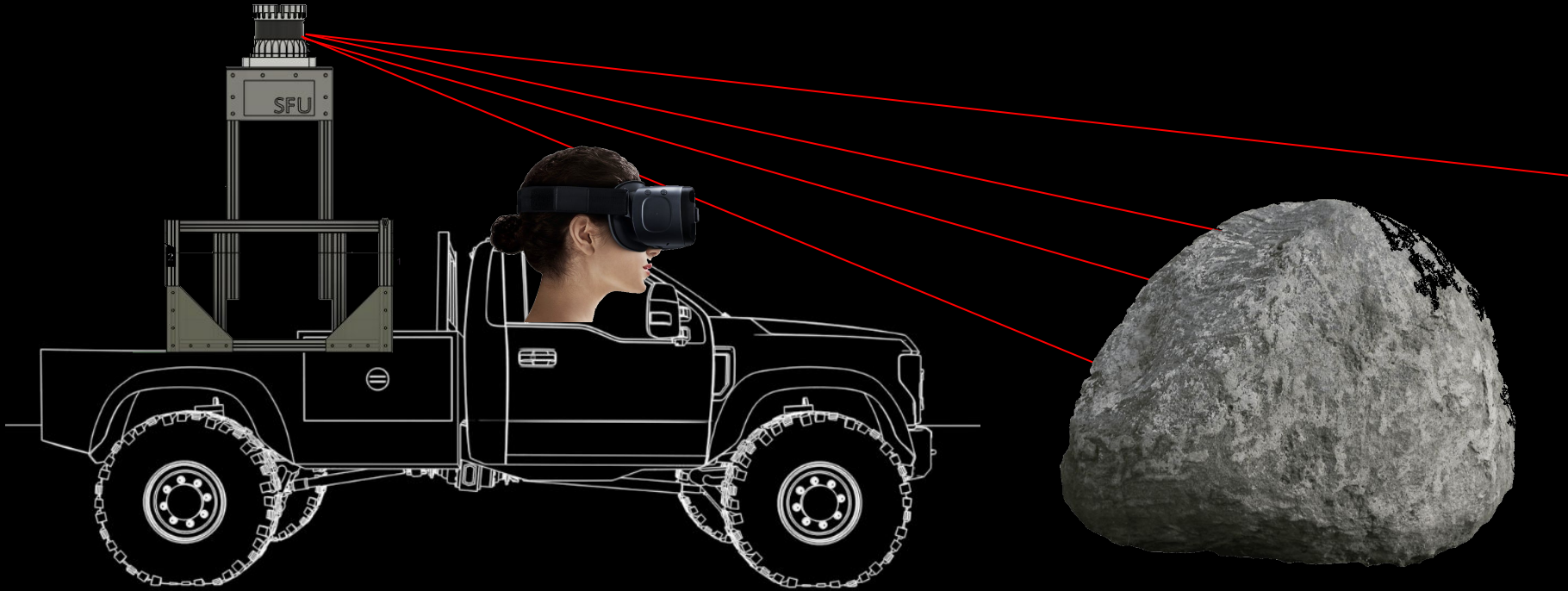
- Robot Operating System (ROS)
- Gazebo Simulation
- RTABMap
- Simultaneous Localization and Mapping (SLAM)

3. Extended Reality and video game engines



- Built using the Unity game engine
- Displayed on Microsoft HoloLens 2

All together now...





Volvo ARCAR



BMW ///M Mixed Reality



Thank you!

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References

KXI Wildertec video: <https://www.youtube.com/watch?v=39WrW9r4sbq>

Bolt with LiDAR:

https://commons.wikimedia.org/wiki/File:Cruise_Automation_Bolt_EV_third_generation_in_San_Francisco.jpg

Nick's paper on VR spatial interfaces:

<https://www.press.bmwgroup.com/global/article/detail/T0405390EN/highly-dynamic-and-completely-real-turns-in-a-virtual-world:-bmw-/m-mixed-reality-revolutionizes-driving-experience>

<https://www.media.volvocars.com/ca/en-ca/media/pressreleases/253105/volvo-cars-and-varjo-launch-world-first-mixed-reality-application-for-car-development>