



Workshop Housekeeping

Python Fundamentals for Engineers and Manufacturers

Hosted By

SME Chapter 112
Chicagoland



Workshop repo
<http://bit.ly/2opFlZ6>



SME Chapter 430
Greater Charleston



Where is all the info for this workshop?



<http://bit.ly/2opFlZ6>

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Workshops are just the beginning.

Workshop repo

<http://bit.ly/2opFlZ6>



- Open-source projects on [GitHub](#)
- Targeted webinars on [YouTube](#)
- Real-world, industry use-cases on [YouTube](#)
- Industrial hardware/software [hackathons](#)
- Virtual assistance with SME student chapter projects.

We ❤️ feedback and suggestions!

<http://bit.ly/2G42GXy>

Robot Operating System

<http://www.ros.org/>

OpenCV

<https://opencv.org/>

CUDA

<http://bit.ly/2F9tpkH>

NVIDIA Jetson Boards

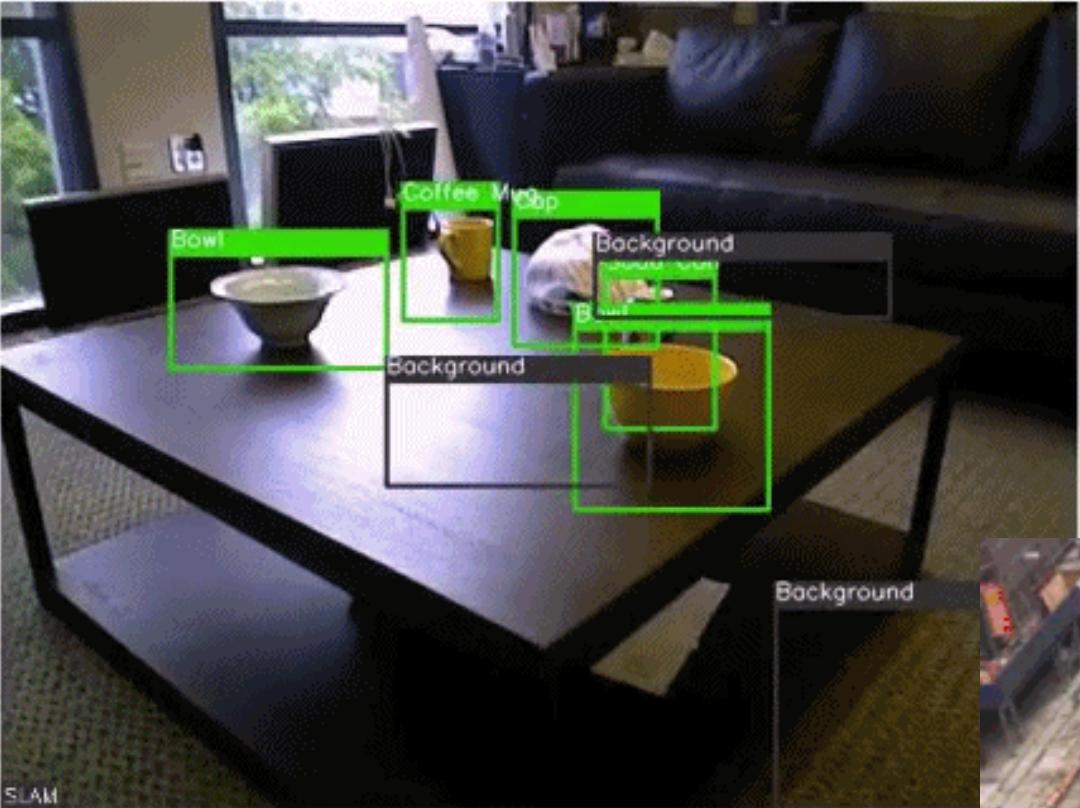
<http://bit.ly/2FOnx1f>



PX4 – Flight Stack and Autonomous Middleware

<http://px4.io/>

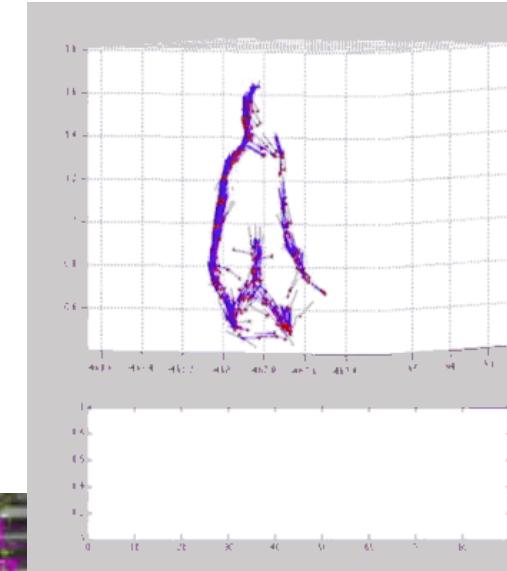
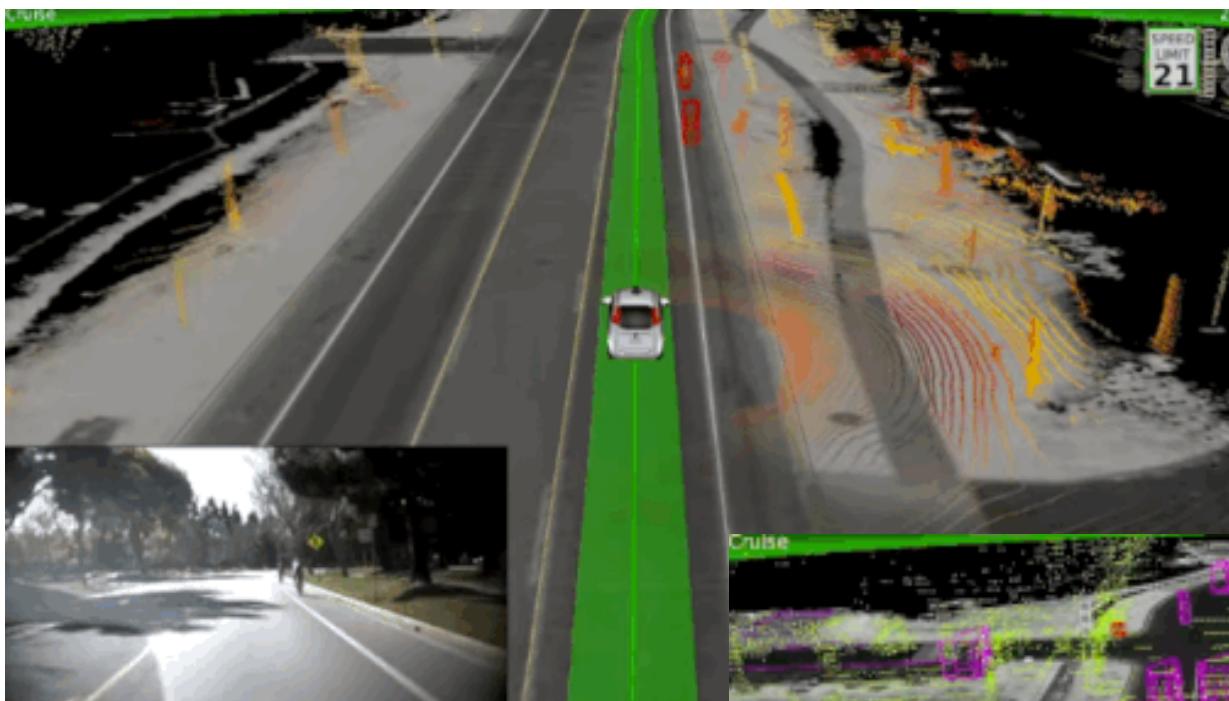




OpenCV
<https://opencv.org/>

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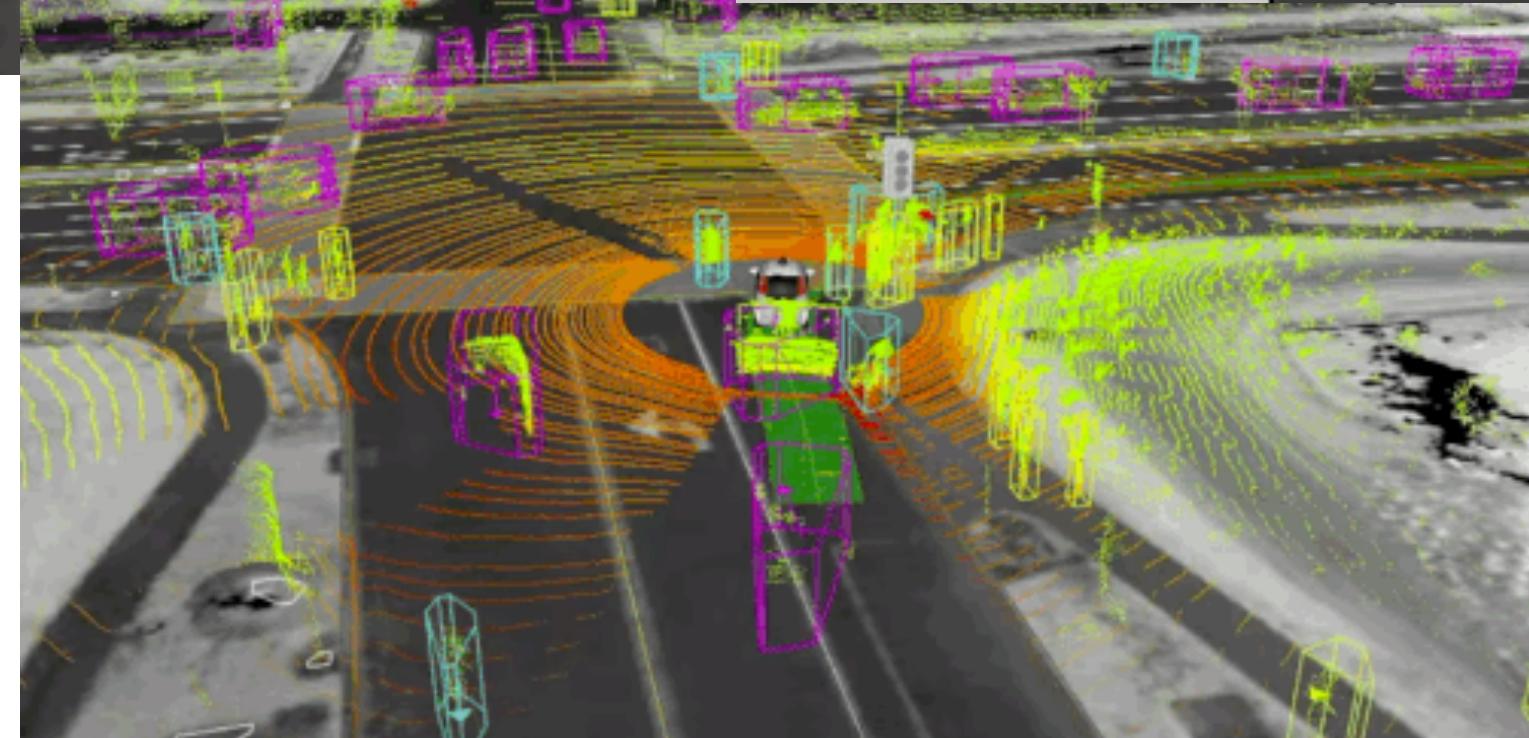




CARLA
<http://www.carla.org/>

**Udacity Self-Driving
Simulator**
<http://bit.ly/2oKNKFY>

Unity
<https://unity3d.com/>



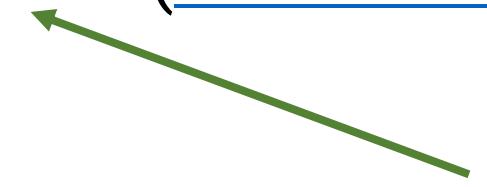
- Introduction to [Git](#).
- Introduction to the Python interpreter and [pip](#) ecosystem.
- Introduction to [Jupyter](#) Notebooks.
- Data types and objects.
- Reading and writing data.
- Control flow.
- Loops and iterables.
- Functions.
- Classes.
- Packages.

There will be do-it-yourself challenges throughout!

- Documentation.
- Testing.
- Debugging.
- Profiling.
- Network communication.
- Data exploration and visualization (with [NumPy](#) and [Pandas](#)).

There will be do-it-yourself challenges throughout!

- Concurrency and parallelism.
- Hardware description and verification ([HDL](#)).
- Computational geometry (pretty good video [here](#)).
- Image manipulation and machine vision.
- Neural networks ([CNN or ConvNet](#)).



Check out the [TensorFlow Playground](#).

There will be do-it-yourself challenges throughout!