

# Rishabh Choudhary

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LinkedIn: [Rishabh Choudhary](#) | Github: [rishchou](#) | Portfolio: [Rishabh Choudhary](#)

## Education

- **University of Maryland, College Park, M.Eng (Robotics), GPA - 3.9/4.0** Aug 2018 - May 2020
- **Birla Institute of Technology and Science, Pilani, B.E. (Hons), Electrical and Electronics Engineering** 2012 - 2016

**Relevant Coursework:** Visual learning and recognition, Natural Language Processing, Computer Vision, Path Planning algorithms, Data structures and Algorithms, Operating Systems, Software development for Robotics, Machine learning.

## Experience

### Professional Experience

- **Computer Vision/Deep learning Intern, Sturfee, Milpitas, CA** Jun - August 2019
  - Synthetic data generation of street and aerial view by navigating the camera in simulated environment in Blender/AirSim for augmented reality applications. The data was also trained and tested over a neural network for alignment of Street view and Aerial Point cloud.
  - This project helped Sturfee generate realistic datasets in house without manually collecting street view pictures and reduced the dataset generation cost.

### Software Developer, Cisco systems, Bangalore

Aug 2016 - Aug 2018

- Designed and Implemented Adaptive Authentication model using Machine learning for RADIUS Protocol as part of the Cisco Hackathon. Awarded runner-up position for the idea/implementation. [Python]
- Designed and Implemented boot up memory optimization of AAA (Authentication, Authorization and Accounting) module for Routers and Switches to reduce memory usage at startup by about 30%. [C++]
- Led automation framework for unit testing and integration tests to enhance code quality assurance and boost code coverage of AAA component from 20% to 70%. [SWIFT/C]
- Resolved numerous bugs and deployed new features for the AAA framework.

### Research Experience

#### Graduate Research Assistant, Perception and Robotics Group, University of Maryland

Oct 2018 - May 2019

- Rendered a 3D scene using Blender to simulate data for visual odometry for drone applications.

### Project Experience

- Traffic sign detection and classification using computer vision and machine learning [Python] May 2019
- Object detection and localization using Convolutional Neural Networks/YOLO [Python] April 2019
- Generation of artistic style Imagery using Neural Style Transfer [Python] March 2019
- Visual Odometry: Generation of scene structure using SfM for a motion of camera mounted on a car. March 2019
- AR Tag detection and tracking for a given video sequence. Oct 2018
- Exploration and 3D depth map generation robot using ROS and C++ Oct 2018
- Traffic lane detection and tracking using C++ and OpenCV Sept 2018

## Computer Skills

- **Languages:** C, C++, Python, HTML/CSS
- **Tools and Libraries:** Github, Linux, GDB debugging, MATLAB, Eclipse, Blender, Unity, Wireshark, Arduino, Valgrind, OpenCV, OpenGL, CUDA, PCL, scikit-learn, pandas, numpy, scipy, tensorflow, keras, pytorch, plotly
- **Game Engines/Simulators** - Unity, Blender, Unreal, Microsoft AirSim.
- **Software development:** Agile development, Automated/Manual Unit testing, Google Mock/Test framework

## Positions of Responsibility

- **Project lead, Hackaholic (Cisco's annual hackathon)** June 2018
- **Project coordinator, IEEE, BITS PILANI.** Aug 2014- May 2015
- **Teaching Assistant, Microprocessor and Interfacing course, BITS Pilani** Jan -May 2015