SUMEET BATRA

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EDUCATION

University of Colorado Boulder; BS in Computer Science, Minors in Applied Math and Japanese *(Senior-year 1)*

Graduation: May 2020

University of Colorado Boulder – 4.0 GPA Cumulative

- Relevant Coursework: Algorithms, Linear Algebra, Multivariable Calculus (3), Data Structures, Operating Systems, Intro to Robotics, Applied Probability, Machine Learning, Deep Learning
- Semester study abroad in Japan – Japanese Language at Doshisha University
- Awarded Engineering Honors Scholarship
- Awarded Dean's List for Academic performance all semesters

Technical Skills

- Python(proficient), Robotics OS (ROS) (proficient), OpenCV(past exp.), PyTorch(past exp.), C++(past exp.)
- Object Oriented Programming, Agile Development
- Familiar with Keras, Tensorflow, Scala, Android Studio, Java, C

RELATED EXPERIENCE

Undergraduate Research Assistant: Machine Learning for Human Robot Interaction **August 2018 – Present**

- Using machine learning algorithms to design a framework for robotic assistants to assist humans in complex tasks in an unsupervised setting.
- Framework will allow robotic assistants to assist with tasks it hasn't seen before by drawing on prior knowledge/learning.

Autonomous Package Delivery Drone Project **August-December 2017**

- Created a delivery drone that uses real time object recognition for detecting "packages" to pick up that would then pick up the package and return it to the drone's starting location
- Used Parrot Bebop 2 as the drone platform that sends video data to a separate PC running a Region Proposal Neural Network (Faster-RCNN) for real time object recognition capable of doing 30fps single class detection with a 1080TI and Intel i7 CPU

Undergraduate Research Assistant: Discovery Learning Apprenticeship (DLA) **August 2016 – May 2017**

- Worked at the Guided Wave Optics Lab (GWOL) to research the potentials of optical interconnects and data center disaggregation to improve data center efficiency. Project involved using an FPGA as a driver to determine bit error rate in data transmission across optical chips at 25 Gbps speed.

Undergraduate Research Assistant: Swarm Robotics + Augmented Reality **Summer 2016**

- Worked at the Correll Lab to develop an AR mobile application for tracking robotic "Droplets" that behave as atoms/molecules, and overlaying atomic information over the Droplets using the OpenCV library.
- In the process of co-writing and publishing a paper with faculty mentor Nikolaus Correll on using Augmented Reality to improve human-swarm interaction

LEADERSHIP AND INVOLVEMENT

Volunteer, CU Students for the Exploration and Development of Space (CUSEDS) Outreach. **October 2015**

- Paneled for 8th grade students creating prototype landers for dropping payloads on Mars
- Assisted in refining and revising students' ideas and prototypes

ARTICLES AND PUBLICATIONS

- Currently co-authoring a paper with Nikolaus Correll on Swarm Robotics UROP research project
- Wrote a research paper on the impact of the digital revolution on modern technology, as well as understanding the impact of current technologies such as augmented reality, IoT, and quantum computing