

# SIDDHANT JAIN

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## EDUCATION

### Carnegie Mellon University

MS in Computer Vision | CGPA: 4.07

August 2017 – December 2018

### Birla Institute of Technology and Science, Pilani

BE Computer Science | MSc Economics

August 2010 – June 2015

Undergraduate Thesis: Handling dynamic class boundaries in a classification system

## PATENTS

Method and apparatus for real-time matting and despilling using local color estimation and propagation | Issued: 10/10/2017

Creating Personalized Catalogues with Recommendations Embedded in Augmented Viewpoint to Retarget Consumers | Filed 10/31/2016

Removing Overlays from a Screen to Separately Record Screens and Overlays in a Digital Medium Environment | Filed 11/14/2016 (First Inventor)

## INTERNSHIPS

### DELL EMC | Jan' 15–June' 15

Built a hybrid cloud monitoring solution for on-premise + AWS/GCloud infrastructure

### Adobe Systems | May' 14 – July' 14

Real-time video segmentation fusing motion, color & shape cues for webcam videos

## ACADEMIC PROJECTS

### One shot learning for video object segmentation using 3D convolutions:

Developed deep learning system in PyTorch employing 3D convolutions to explore transfer learning in the I3D network for video segmentation

**Landing Site SLAM for UAVs:** Fused semi-direct visual odometry with non-linear ICP to build a full SLAM system for landing zone evaluation for autonomous landing

**Data Augmentation using semantic segmentation:** Developed a novel data augmentation method for object detection by using semantic segmentation labels, improving classifier accuracy by ~10%

## RESEARCH ENGINEERING EXPERIENCE

### Adobe Systems, Seattle | *Creative Intelligence Lab Intern*

MAY 2018 - AUGUST 2018 | Creative Intelligence Lab

- Working on building a deep-learning system to perform parametric style transfer
- Wrote custom tensorflow layers in C++ to build an end-to-end learning system by integrating the non-differentiable style renderer into the network
- Building a new dataset by analysing 10k+ movie trailers for extracting datapoints suitable for training

**Mentors:** Oliver Wang, Kalyan Sunkavalli, Eli Shechtman, Kevin Wampler

### Velodyne Lidar, Pittsburgh | *Co-Op Student*

JAN 2018 - DEC 2018 | Robotics Institute, CMU

- Developing a point cloud annotation tool with a focus on interactive segmentation of 3D point clouds using a one-shot learning framework for adapting to a wide range of point clouds
- Wrote C++ library providing APIs for manipulating point clouds, extracting deep features and point cloud segmentation

**Mentor:** Prof. David Held (CMU)

### Adobe Systems, Bangalore | *Member Of Technical Staff 2*

JULY 2015 - AUGUST 2017 | eLearning

- Invented and developed in C++, a real-time background removal system for webcam videos for 2015 release of Adobe Presenter Video Express. (USPTO patent granted)
- Invented and developed an industry first alpha-blending based technique for removing recording cues from screen recordings. (USPTO patent application filed as first inventor)
- Developed a framework for 3D object placement, room scanning in C# to be used in a Hololens language learning game
- Mentored interns on AR application development using Unity and Vuforia for 3D style matching based recommendations

**Awards:** Innovation Excellence Award, Spot Awards

**Tech Transfers:** Two projects transferred as marquee features in Adobe Presenter Video Express

### PWC, Pittsburgh | *Research Assistant*

FEB 2018 - MAY 2018 | Risk & Regulatory Services Innovation Center, CMU

- Implemented the center's theoretical research work on IOT Risk assessment into a fully-functional tool that does automatic risk assessment for IOT threats and recommends effective controls

**Mentor:** Prof. Bruno Sinopoli (CMU)

**Tech Transfers:** Invention disclosure filed in tech transfer office