

# Gaurav Parmar

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**GitHub:** <https://github.com/GaParmar> | **LinkedIn:** <https://www.linkedin.com/in/parmargaurav/> | **http://gauravparmar.com/**

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## EDUCATION

University of California San Diego

**Anticipated June 2020**

Bachelor of Science in Computer Science (**honors**), minor in Cognitive Science

**GPA: 3.74**

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## RELEVANT EXPERIENCE

**Research Intern, Qualcomm Research & Development**

**(Summer '19)**

- Implemented state of the art methods for quantizing mobilenet based models with minimal drop in accuracy
- Investigated the accuracy/runtime tradeoff for 8-bit quantized DeepLab v3+ model
- Created a pipeline for compressing a pre-trained DeepLab v3+ to run inference at 20 fps on a smartphone (in preparation for the Qualcomm demo booth at NeurIPS 2019)

**Undergraduate Researcher, Prof. Zhuowen Tu - UCSD**

**(September '18 - October '19)**

- Formulated a new geometrically inspired loss function for the task of skeleton detection that achieved improvements over the previous state of the art methods. *Published* the results at the British Machine Vision Conference (BMVC 2019)
- Explored the use of adversarial learning and geometric consistency for improving the performance of semantic segmentation models in a few-shot and semi-supervised setting
- Explored disentangled generation of images by through guidance in the latent space of a VAE (*under review*)

**Instructional Assistant, COGS 181: Advanced Machine Learning Concepts**

**(Spring '19)**

- Responsible for grading, holding office hours and teaching the discussion sections

**Undergraduate Researcher, Smart Wheelchair Research Group, Prof. Jack Silberman UCSD**

- Recipient of the Triton Research Scholarship

**(March '18 - June '19)**

- Explored the use of stereo cameras as a cost-effective alternative for generating depth maps.
- Implemented a camera-based visual SLAM system that uses the ORB-SLAM algorithm
- Explored the use of QR codes in the environment for faster localization in the map
- *Published* the system overview at CHI 2019 conference and won 3rd place at the Microsoft Student Research Competition (<https://dl.acm.org/citation.cfm?id=3308463>)

**Software Intern, Qualcomm Incorporated**

**(Summer '18)**

- Developed a tool using C++ to verify the Carrier Aggregation capabilities of the devices
  - Developed an internal web application using D3 and Cytoscape to interactive visualize the isometric subset relationships between different carrier aggregation combo bands.
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## Miscellaneous Projects

**Synesthetic Solutions** - digital augmentation for the traditional blind stick

- An end-to-end system that uses stereo cameras to build a depth map and provide haptic feedback to users
- Best project award at the ENG 10 exposition and 3rd place at 2018 Triton Entrepreneur Event
- Awarded \$5000 of prototype development funding by the UCSD Basement

**Autonomous Car** (scale 1:10)

- Utilizes a CNN based policy network to predict the steering angle and throttle outputs for the motors  
Developed a framework for collecting data and training the policy network in a supervised manner
- Developed a multi-threaded inference script that is able to execute the inference pipeline at 30 FPS

**Interpretable NLP (class project: CSE 156)**

- Implemented a trigram based and a word2vec based sentiment analysis language model
- Built a web interface to interactively compare the subtle difference and the failure cases of the two models
- Awarded the best project award in a class of more than 150 students