Meghana Reddy Ganesina

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Education

Carnegie Mellon University — School of Computer Science Pittsburgh, PA
Master of Science in Computer Vision — GPA: 4.04/4.33 *Dec 2022*

National Institute of Technology Warangal Warangal, India
Bachelor of Technology in Electronics & Communication Engineering— 8.66/10 (Merit Scholarship) *May 2018*

Experience

Zoox Inc Foster City, CA
Prediction Machine Learning Intern *May 2022 – Aug 2022*

- Proposed an agent trajectory autoencoder inspired from Multi-Context Gating architecture for the downstream task of predicting consistent and diverse future agent trajectory set.
- Modelled agent centric road graph features by encoding lane information of closest lane vectors through weighted-strided sampling and used attention pooling to outperform the baseline by 5% in min-ADE metrics.
- Introduced agent behavior group based weighted loss and metrics to account for the dataset bias; visualized the latent space representation of different agent behaviors.

CMU Argo AI Center for Autonomous Vehicle Research Pittsburgh, PA
Research Assistant, Advisor: Prof Deva Ramanan *Oct 2021 – Present*

- Established open world LiDAR panoptic segmentation task setting, evaluation protocol and baselines by introducing the concept of catch-all class using Semantic-KITTI and KITTI-360 datasets.
- Improved panoptic quality and generalizability of LiDAR panoptic segmentation model by adapting bottom-up hierarchical segmentation methods which uses learned objectness scoring.

Samsung Semiconductors India R&D Bangalore, India
Associate Staff Engineer | Senior Engineer *Jun 2018 – Jun 2021*

- Published low power design verification methodology in Cadence Live 2021 for virtual reality based silicon which resulted in 40% efficiency in project timelines. Received Best Employee Award.
- Led a team to design testbench methodology and coordinated with firmware team to provide silicon bring-up support until production for LPDDR4x DRAM interface in Advanced Driver-Assistance System based silicon.

National Institute of Technology Warangal Warangal, India
Undergraduate research *Aug 2018 – Dec 2018*

- Proposed a ResNet based segmentation-free classification method for whole slide images of cervical cell clusters with an accuracy of 96.37% on SIPakMeD dataset.
- Explored the features (like size of peri nuclear cavity, cytoplasm and nucleus) learnt by the network by applying PCA on the penultimate layer of the network and explored visual saliency using Grad-CAM.

Indian Institute of Science — Computational Intelligence Lab Bangalore, India
Summer Research Intern, Advisor: Prof S.N Omkar *May 2016 - Aug 2016*

- Designed a disguised face identification pipeline using Spatial Fusion Deep CNN for facial keypoints detection with an accuracy of 78.4%; analyzed the performance to variations in occlusion, background clutter and multiple subjects in the images.
- Annotated facial key points dataset with 10 disguises on 25 subjects and variations in complexity in backgrounds to facilitate further research. Media coverage: Featured in Discovery Seeker, TED talk, Cover of Economist.

Publications

- Automatic Classification of Whole Slide Pap Smear Images Using CNN With PCA Based Feature Interpretation. **Meghana Ganesina****, & Kiran, G. V.**. **CVPRW 2019** (** indicates equal contribution) Link
- Disguised face identification (DFI) with facial keypoints using spatial fusion convolutional network. Singh, A., Patil, D., **Meghana Ganesina.**, & Omkar, S. N. **ICCVW 2017** (Citations: 58) Link

Technical Skills

Languages: C++, C, Python, Verilog, System Verilog
Tools & Technologies: Linux, Git, MATLAB, Jira
Frameworks & libraries: PyTorch, TensorFlow, Pandas, NumPy, Matplotlib