Syed Ashar Javed

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Education

2018 – 2019 **Carnegie Mellon University, Pittsburgh**
M.S. in Computer Vision (Graduating Dec 2019)

2012 – 2016 **Jamia Millia Islamia, New Delhi**
B.Tech. in Computer Science

Work Experience

Jan '19 – Current **Amazon Lab126.** Student researcher (Capstone)

– Working on online camera calibration for visual SLAM and analyzing how changes in the camera parameters affect SLAM algorithms.

Mar '17 – Apr '18 **CVIT lab, IIIT Hyderabad** Research Assistant.

– Formulated a self-supervised approach for unsupervised visual grounding of phrases and obtained state-of-art results on multiple datasets. Work presented at NeurIPS workshop 2018 & under review at CVPR 2019.

– Trained a state-of-art small obstacle segmentation model for autonomous vehicles using as few as 135 frames by exploiting structure in the road scene. Work presented at ICRA 2018.

– Formulated a Gaussian Process based synthetic data generation scheme and built an online prediction model for real-time video stabilization in virtual camera simulation.

Jun '16 – Feb '17 **Cube26.** Research Engineer

– Implemented multiple papers in the neural art domain for real-time stylization of images. Models deployed to tens of thousands of devices.

– Incorporated object-level contextual information to improve scene classification in CNNs. Work presented at CVPR 2017 workshop.

– Explored LDA and Bayesian Optimization using GP & Thomson Sampling for recommendation systems.

– Benchmarked LSTM models for spoken language identification in speech signals obtained from videos.

Nov '16 – Dec '16 **Netra Inc (Remote).** Freelance Computer Vision Developer

– Built a deep neural architecture for logo recognition in social media images.

Dec '15 – Jan '16 **Servify.** Product Developer

– Designed the backend architecture and developed server-side APIs on Node.js

Jun '14 – Jul '14 **Reliance Industries.** Summer Intern

– Built a vision based fire detection system for open industrial setting.

Research Papers and Preprints

1. Javed, S. A., Saxena, S., & Gandhi, V. (2018). Learning unsupervised visual grounding through semantic self-supervision. *NeurIPS 2018 ViGIL Workshop; under review at CVPR 2019*.
2. Gupta, K., Javed, S. A., Gandhi, V., & Krishna, K. M. (2018). Mergenet: a deep net architecture for small obstacle discovery. *ICRA 2018*.
3. Javed, S. A. & Nelakanti, A. K. (2017). Object-level context modelling for scene classification with context-cnn. *CVPR 2017, SUN Workshop*.
4. Ahmad, M., Ahmad, F., & Javed, S. A. (2017). Cryptanalysis of an asymmetric image cryptosystem based on synchronized unified chaotic system and cnn. In *Icicc 2017*.

Key Academic Projects

Event recognition in complex videos using multi stream CNNs

Explored fusion techniques for the spatial (static frames) and temporal (stacked optical flow) streams from a CNN as proposed in the two-stream CNN paper by Simonyan et al. Also modeled temporal information in videos using LSTMs.

Understanding the role of context in object recognition

Used a conditional random field to model geometric, semantic and spatial context to improve object recognition as done by Rabinovich et al. Also evaluated GIST for global, scene-level priming.

Skills

Languages Python, C, C++, Javascript, Matlab, SQL, HTML.

Tools OpenCV, Tensorflow, Theano, Keras, PyTorch, Numpy/Sklearn, Matplotlib, Django.