Shubhra Aich

| Google Scholar | Linkedin | Website | Github | Kaggle |

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Experience

- **Huawei Technologies** — Markham, ON, Canada
  Associate Researcher in Self-Driving Car Project at Noah's Ark Lab — *May 2019 - Present*
- **Honda R&D Innovation Lab Tokyo (HIL-TK)** — Akasaka, Tokyo, Japan
  Computer Vision and Applied Machine Learning Intern — *April 2018 - March 2019*
- **Samsung R&D Institute Bangladesh (SRBD)** — Dhaka, Bangladesh
  Software Engineer — *Apr 2013 - Aug 2014*

Education

- **University of Saskatchewan** — Saskatoon, Canada
  Master of Science in Computer Science — *Jan 2017 – April 2019*
- **Chonnam National University** — Gwangju, South Korea
  Master of Engineering in Electronics and Computer Engineering — *Sep 2014 – Aug 2016*
- **Bangladesh University of Engineering and Technology** — Dhaka, Bangladesh
  Bachelor of Science in Electrical and Electronic Engineering — *Jan 2008 – Dec 2012*

Projects

- | Monocular 3D Object Detection | Object Counting with Deep Learning | Object Detection in Agricultural Images |

Research Interests

- | Machine Learning | Computer Vision | NLP Aided Visual Learning | Reinforcement Learning | Artificial General Intelligence |

Publications

- S. Aich, I. Stavness, Y. Taniguchi, and M. Yamazaki. Multi-Scale Weight Sharing Network for Image Recognition. *Pattern Recognition Letters, Elsevier.* ArXiv Link
- J. Vianney*, **S. Aich***, and B. Liu. *RefinedMPL*: Refined Monocular PseudoLiDAR for 3D Object Detection in Autonomous Driving. (***equal contribution**) ArXiv
- **S. Aich** and I. Stavness. Global Sum Pooling: A Generalization Trick for Object Counting with Small Datasets of Large Images. *CVPR Workshop (Deep Vision) 2019.* Paper
- **S. Aich**, W. van der Kemp, and I. Stavness. Semantic Binary Segmentation using Convolutional Networks without Decoders. *CVPR Workshop (DeepGlobe) 2018.* Paper Code
- **S. Aich** and I. Stavness. Improving Object Counting with Heatmap Regulation. *Under review in Machine Vision and Applications, Springer.* ArXiv Code
- **S. Aich *et al.*** DeepWheat: Estimating Phenotypic Traits from Crop Images with Deep Learning. *WACV 2018.* ArXiv Code
- **S. Aich** and I. Stavness. Leaf Counting with Deep Convolutional and Deconvolutional Networks. *ICCV Workshop (CVPPP) 2017 (Oral Presentation).* Paper Code
- **S. Aich**. Recognition of Flower Species using Visual Vocabulary of Compound Descriptors. *Masters Thesis, Chonnam National University, South Korea 2016.* PDF Code
- **S. Aich**, and C-W. Lee. A General Vocabulary Based Approach for Fine-Grained Object Recognition. *PSIVT 2015. LNCS Springer.* Link Code

Awards

- **Microsoft Azure AI for Earth**: Awarded $10K$ USD equivalent HPC hours for agricultural vision projects.

Technical Skills

- **Languages**: Python, MATLAB, C/C++, Lua, R, CUDA-C(Elementary)
- **Toolkits**: PyTorch, Torch, TensorFlow(v2), Keras, OpenCV, Docker, conda, scikit-learn, scikit-image, pandas, git

Self-Driven Projects

- **(Kaggle) Carvana Image Masking**: High resolution car image segmentation (binary) problem. Ranked 18/735 (Top 3%).
- **(Kaggle) Cdiscount's Image Classification**: Large-scale e-commerce image classification challenge over 5270 categories. The training and the test datasets comprise $12M$ images and $1.7M$ products, respectively. Ranked 103/627 (Top 17%).
- **(Kaggle) Human Protein Atlas Image Classification**: Retrieval of protein categories (out of 27) from 4-channel images. Unlike typical image classification, each image contains variable number of categories. Ranked 369/2172 (Top 17%).
- **(Kaggle) TensorFlow Speech Recognition**: Classification of speech signal over 10 different categories. Top 27%(351/1315).

MOOC Verified Courses

- **Udacity**: | Sensor Fusion Nanodegree | Deep Reinforcement Learning Nanodegree | Deep Learning Nanodegree |
- **Coursera**: | Deep Learning Specialization (Andrew Ng) | Machine Learning by University of Washington | The Data Scientist's Toolbox | Algorithms by UC San Diego | Synapses, Neurons and Brains by Hebrew University of Jerusalem |
- **Stanford Online**: | Statistical Learning |
- Links to all the **Verified Certificates**