Shubhra Aich

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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*

Technical Skills

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

Projects

- **Object Counting with Deep Learning (Thesis)**: Counting object instances from images.
- **Object Detection and Segmentation (Internship)**: Developing simultaneous, high-precision object detection and segmentation algorithms for a particular future robotic system.

Research Interests

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

Publications

- **S. Aich** *et al.* MSNet .... *under review in ICCV 2019*.
- **S. Aich**, and I. Stavness. Global Sum Pooling: A Generalization Trick for Object Counting .... *Deep Vision CVPR 2019*. ArXiv
- **S. Aich**, ... Semantic Binary Segmentation using Convolutional Networks without Decoders. *DeepGlobe CVPR 2018*. Paper Code
- **S. Aich**, ... Improving Object Counting with Heatmap Regulation. *Under review in Pat. Rec. Letters, Elsevier*. ArXiv Code
- **S. Aich** *et al.* DeepWheat: Estimating Phenotypic Traits from Crop Images with Deep Learning. *WACV 2018*. ArXiv Code
- **S. Aich**, ... Leaf Counting with Deep Convolutional and Deconvolutional Networks. *CVPPP ICCV 2017 (Oral)*. Paper Code
- **S. Aich**. Recognition of Flower Species using Visual Vocabulary of Compound Descriptors. *Masters Thesis, 2016*. PDF Code
- **S. Aich**, and C-W. Lee. A General Vocabulary Based Approach for Fine-Grained Object Recognition. *PSIVT, 2015*. Link Code

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. Finished in top 27%(351/1315).

Awards

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

MOOC Verified Courses

- **Udacity**: | 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**