

Shubhra Aich

| Google Scholar | LinkedIn | Website | Github | Kaggle |

Email : s.aich.72@gmail.com

Mobile : +1-306-914-4619

EXPERIENCE

- **Huawei Technologies** Markham, ON, Canada
Associate Researcher in the Self-Driving Cars Project in 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
Apr 2018 - Mar 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 - Apr 2019
 - Thesis: Object Counting with Deep Learning ([Link](#))
- **Chonnam National University** Gwangju, South Korea
Master of Engineering in Electronics and Computer Engineering
Sep 2014 - Aug 2016
 - Thesis: Recognition of Flower Species using Visual Vocabulary of Compound Descriptors ([Link](#))
- **Bangladesh University of Engineering and Technology** Dhaka, Bangladesh
Bachelor of Science in Electrical and Electronic Engineering
Jan 2008 - Dec 2012

RESEARCH INTERESTS

- | Computational and Biological Vision | Psychophysics | Artificial General Intelligence |

PUBLICATIONS

- **S. Aich***, J. Vianney*, M. A. Islam, M. Kaur, and B. Liu. Bidirectional Attention Network for Monocular Depth Estimation. (***equal contribution**) *Under review in ICRA 2021*. [ArXiv](#)
- **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 Kamp, 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. [ArXiv](#) [Code](#)
- **S. Aich**, A. Josuttes, I. Ovsyannikov, K. Strueby, I. Ahmed, H. S. Duddu, C. Pozniak, S. Shirliffe, and I. Stavness. 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 & best poster award). [Paper](#) [Code](#)
- **S. Aich**, and C-W. Lee. A General Vocabulary Based Approach for Fine-Grained Object Recognition. *PSIVT 2015. LNCS Springer*. [Link](#) [Code](#)

TECHNICAL SKILLS

- **Languages:** Python, MATLAB, C/C++, Lua, R, CUDA-C/C++
- **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).

AWARDS

- **University of Saskatchewan Computer Science Graduate Thesis Award:** Received the Master's thesis award for research excellence in Computer Science for the thesis titled **Object Counting with Deep Learning** ([Link](#))
- **Microsoft Azure AI for Earth:** Awarded 10K USD equivalent HPC hours for agricultural vision projects.

MOOC VERIFIED COURSES

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