Md Arifur Rahman

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EDUCATION

Technical University Dortmund, Germany — Winter 2020/21- Present
Master of Science in Data Science

American International University-Bangladesh — May 2015 - January 2021
B.Sc. in Computer Engineering

RESEARCH PROJECT HIGHLIGHTS

✓ Deep Network Architectures for Object Detection and Segmentation

In this project, we have worked on simple yet powerful deep network architecture, U2-Net, for salient object detection (SOD) and utilized & extended the architecture in order to improve the efficiency of the "Image Background Removal" & "Ghost Mannequin". The design has the following advantages: [GitHub-Private]

- It captures more contextual information while generating image masking from raw images
- It increases the depth of the whole architecture without significantly increasing the computational cost because of the pooling operations used in these RSU blocks.

✓ Automatic Image Resizing from Masking Based on U2-Net Architecture

In this project, we have created a simple yet powerful algorithm (accuracy: ~ 99.15%) that can join all the curves of all the uninterrupted points on the edge and use the U2-Net architecture to automatically resize the image from image masking. The algorithm has the following advantages: [GitHub- Private]

- It removes unwanted objects, leaving desired objects in the image
- It automatically margins objects.

PUBLICATIONS

Journal Paper(s)

1. Md Ashikur Rahman, Md Arifur Rahman and Juena Ahmed Noshin. Automated Detection of Diabetic Retinopathy using Deep Residual Learning. International Journal of Computer Applications 177(42):25-32, March 2020.

EMPLOYMENT

CutOutWiz Ltd., Bangladesh
Machine Learning Engineer (Remote) — March'21 – present

Contributions:

- To work on Deep Network Architectures for Object Detection and Segmentation
- To look for unanswered questions, insights, and research limitations & impediments when developing neural architecture
- Developing the training & validation procedure to increase the model efficiency
- To write optimized & clean codes maintaining design principles using Python

MENTORSHIP

Undergraduate Research Mentees (underrepresented and minority students are marked with *)

- Md Amir Faisal* (Computer Science)
- Shabuj Ahmed (Computer Science)

INTERESTS

Machine Learning and Optimization
Neural Networks
Computer Vision
Natural Language Processing

TECHNICAL SKILLS

Machine Learning	Supervised and Unsupervised Learning, Linear Models, Stochastic Processes
Computer Vision	Deep Network Architecture: U2-Net, Mask R-CNN
Programming/Analytics	Python and R, C/C++, Database (MySQL, MS SQL Server)
Software & Tools	PyCharm, Google Colab
Open Source ML Library	Keras, PyTorch, TensorFlow
Version Control	GitHub, Bitbucket
Design Tools	Adobe Design Suite: Photoshop

ONLINE COURSES & CERTIFICATION

- Machine Learning A-Z™: Hands-On Python & R In Data Science
- Data Science A-Z™: Real-Life Data Science Exercises Included
- Neural Networks and Convolutional Neural Networks Essential Training
- Artificial Intelligence Foundations: Neural Networks
- Deep Learning: Image Recognition
- Deep Learning: Face Recognition
- Artificial Intelligence Foundations: Thinking Machines
- Big Data Internship Program – Foundation
- Graphs Theory Algorithms
- The World of Design Thinking

LANGUAGES

- Bengali, native proficiency
- German, basic
- English, fluent

ACTIVITIES

Cooking, baking, digital painting, and illustration.