

SHUVENDU ROY

github.com/ShuvenduBikash | shuvendubikash.github.io

bikash.shuvendu@gmail.com | +880 1760 367333 | Dhaka, Bangladesh

RESEARCH INTERESTS

- Machine Learning, Deep learning, Artificial intelligence

EDUCATION

Khulna University of Engineering & Technology
B. Sc. in Computer Science and Engineering
4/2015 – 1/2019
CGPA: 3.26 (out of 4.00)

Govt. M. M. City College,
Khulna, Bangladesh
Higher Secondary School Certificate
4/2012 – 4/2014
GPA: 5.0 (out of 5.0)

Rotary School
Khulna, Bangladesh
Secondary School Certificate
1/2001 – 2/2012
GPA: 5.0 (out of 5.0)

PROFESSIONAL EXPERIENCES

- Robi Axiata Limited** Dhaka, Bangladesh
Specialist, Service Assurance, Business Intelligence Division
11/2019 – Present
 - Analysis and making prediction of business data
 - Implementing recommendation system of telecom packages
 - Analyzing customer segmentsTechnology: Python, PyTorch, Tensorflow, Numpy
 - REVE System Ltd.** Dhaka, Bangladesh
Jr. Software Engineer, ML
3/2019 – 10/2019
 - Developing Spell and Grammar checker and corrector system for Bangla
 - Bangla POS tagger, NER
 - Building conversational ChatBotTechnology: Python, PyTorch, Keras, Tensorflow
-

RESEARCH EXPERIENCES

- REVE System Ltd.** Dhaka, Bangladesh
Topic: NLP
3/2019 – 10/2019
 - Building spell and grammar checker
 - Domain specific ChatBot
 - Undergraduate Thesis** Khulna, Bangladesh
Topic: Computer Vision
1/2018 – 1/2019
 - Improved facial image attribute translation (Face aging effect, Sketch to face generation)
 - Proposed novel approaches for improving the accuracy of facial attribute Classification.
 - Implemented an application for detecting emergency vehicles in heavy traffic road from CCTV.
 - Intelligent System Development Project @ KUET** Khulna, Bangladesh
Topic: Context-aware intelligent typing assistant
6/2018 – 12/2018
 - Proposed a novel approach for spelling error correction
 - Implemented cross-platform application for context-aware multiple word suggestion system
-

PUBLICATIONS

Journals

- Shuvendu Roy, "Applying Aging Effect on Facial Image with Multi-domain Generative Adversarial Network", International Journal of Image, Graphics and Signal Processing(IJIGSP), Vol.11, No.12, pp. 14-22, 2019. DOI: 10.5815/ijigsp.2019.12.02.
- Shuvendu Roy, "Island Loss for Improving the Classification of Facial Attributes with Transfer Learning on Deep Convolutional Neural Network", International Journal of Image, Graphics and Signal Processing(IJIGSP), Vol.12, No.1, pp. 18-29, 2020.DOI: 10.5815/ijigsp.2020.01.03
- M. A. H. Akhand, Shuvendu Roy, N. Siddique and T. Shimamura, "Facial Emotion Recognition using Transfer Learning in Deep Convolutional Neural Network", International Journal of Machine Learning and Cybernetics, Springer, 2020.
- Sneha Paul and Shuvendu Roy, "Forecasting The Average Temperature Rise In Bangladesh: A Time Series Analysis", Journal of Engineering Science 11(1), 2020, 83-91.

Conference Papers

5. **Shuvendu Roy**, Sk. Imran Hossain, M. A. H. Akhand and N. Siddique, "**Sequence Modeling for Intelligent Typing Assistant with Bangla and English Keyboard**", *International Conference on Innovation in Engineering and Technology (ICIET)*, IEEE, Dhaka, Bangladesh, 27-28 Dec., 2018. DOI: 10.1109/CIET.2018.8660871
6. **Shuvendu Roy** and Md. Sakif Rahman, "**Emergency Vehicle Detection on heavy traffic road from CCTV footage using Deep Neural Network**", *2nd International Conference on Electrical, Computer and Communication Engineering (ECCE)*, IEEE, Cox's Bazar, Bangladesh, 7-9Feb., 2019. DOI: 10.1109/ECACE.2019.8679295
7. **Shuvendu Roy**, "**Generating Anime from Real Human Image with Adversarial Training**", *International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT-2019)*, IEEE, Dhaka, Bangladesh, 5-7 May, 2019. DOI: 10.1109/ICASERT.2019.8934465
8. **Shuvendu Roy**, "**Improved Bangla Language Modeling with Convolution**", *International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT-2019)*, IEEE, Dhaka, Bangladesh, 5-7 May, 2019. DOI: 10.1109/ICASERT.2019.8934469
9. **Shuvendu Roy**, "**Denoising Sequence-to-Sequence modeling for removing spelling mistakes**", *International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT-2019)*, IEEE, Dhaka, Bangladesh, 5-7 May, 2019. DOI: 10.1109/ICASERT.2019.8934902
10. **Shuvendu Roy** and Sneha Paul, "**Land-Use Detection Using Residual Convolutional Neural Network**", *International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT-2019)*, IEEE, Dhaka, Bangladesh, 5-7 May, 2019. DOI: 10.1109/ICASERT.2019.8934607
11. **Shuvendu Roy**, Md. Ijaz Sayim and M. A. H. Akhand "**Pathological Voice Classification Using Deep Learning**", *International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT-2019)*, IEEE, Dhaka, Bangladesh, 5-7 May, 2019. DOI: 10.1109/ICASERT.2019.8934514
12. **Shuvendu Roy**, M. A. H. Akhand and N. Siddique, "**Synthesis of Facial Image using Conditional Generative Adversarial Network**", in *5th International Conference on Computer, Communication, Chemical, Materials and Electronic Engineering, IEEE, Rajshahi, Bangladesh, July 11-12, 2019*. 10.1109/IC4ME247184.2019.9036488
13. M. A. H. Akhand, Md. Ijaz Sayim, **Shuvendu Roy** and N. Siddique, "**Human Age Prediction from Facial Image using Transfer Learning in Deep Convolutional Neural Network**", in *International Joint Conference on Computational Intelligence (IJCCI)*, pp.217-229, Springer, Singapore, 25-26 Oct. 2019.
14. **Shuvendu Roy** and Ferdous Bin Ali, "**Unsupervised Context-Sensitive Bengali Spelling Correction with Character N-gram**" in *22nd International Conference on Computer and Information Technology (ICCIT-2019)*, IEEE, Dhaka, Bangladesh, 18-20 Dec. 2019. DOI: 10.1109/ICCIT48885.2019.9038604
15. Ferdous Bin Ali and **Shuvendu Roy**, "**An Unsupervised Approach of Open-Domain ChatBot**" under review as a conference paper.

AWARDS AND SCHOLARSHIPS

- **2nd Runners Up** in "**System Development Project Competition**",
at Khulna University of Engineering & Technology Khulna, Bangladesh
2/2018
- Vocational Scholarship from Khulna University of Engineering & Technology in Khulna, Bangladesh
Academic year 2014 – 2015 and 2017 – 2018 2015, 2018

SKILLS

Deep Learning and Machine Learning

GAN, CNN, RNN, Feedforward, Bayesian, Classification, Regression, Clustering, Data visualization, etc.

Libraries and Technologies

PyTorch, Tensorflow, Theano, Keras, Scikit-learn, NLTK, Matplotlib, Pandas, Matlab, Git, UNIX, Android, IOS, ASP.NET, Oracle, MySQL, Firebase

Programming and Scripting Language

Python, C, C++, Java, C#, R, JavaScript, PHP, Swift, Shell Script

Problem Solving

500+ solved problem in online judges. (200+ in UVa)

Kaggle participation: 5+ competitions

Natural Language

PARTICIPATIONS

- | | |
|---|--|
| • Datathon Bangladesh Axiata Group | Dhaka, Bangladesh |
| Data Science Competition, arranged by Robi | 4/2019 |
| • “Capacity Building for Mobile Game Development Program” sponsored by Ministry of ICT Bangladesh, at Khulna University of Engineering & Technology | Khulna, Bangladesh
11/2016 - 2/2017 |
| • Workshop on “Mobile Application Development” by EATL and Ministry of ICT Bangladesh, at Khulna University of Engineering & Technology | Khulna, Bangladesh
5/2016 – 6/2016 |
| • ACM ICPC programming content in regional level, at Dhaka Regional 2016 | 3/2016 |
-

PROJECTS

- **Cross-Platform Intelligent Typing Assistant** – Cross-platform, context-aware multi-word suggestion system.
 - Bangla programming language (B): Interpreted programming language
 - **Web application:** University management and student social interaction site (ASP.NET)
 - **Mobile applications:**
 - Android: Bus tracker, Blood Bank, Student activity tracker.
 - IOS: Exam preparation helper
 - **Game development:** Coin-collector (Unity) – Finite runner game
 - **Machine Learning and AI projects:**

○ Face detection and verification	○ Bangla OCR – Character level classifier
○ Spelling corrector	○ Improved Bangla language modeling
○ Emergency vehicles detection in road	○ Emotion Transfer – Generate different emotional state of a person
○ Age prediction system	○ Neural Machine Translation for English to Bangla translation
○ Emotion detection system	○ Self-driving car (on simulator)
○ Pathological voice detection from audio	
○ Face Aging – Generate facial image at different age of a given person	
 - **Academic Projects:**

○ System development project	○ Compiler design
○ Android project	○ Software development project
○ IOS project(mobile dev. lab)	○ AI project
○ Database	○ Peripheral system
○ Web development(PHP & ASP.NET)	○ Graphics project.
-

ONLINE COURSES

- | | |
|---|-----------------|
| • Deep Learning Specialization | Coursera |
| • Mathematics for Machine Learning Specialization | Coursera |
| • Advanced Machine Learning Specialization | Coursera |
| • Machine Learning | Coursera |
| • Deep Learning A-Z™: Hands-On Artificial Neural Networks | Udemy |
| • Machine Learning AZ™: Hands-On Python & R In Data Science | Udemy |
| • Artificial Intelligence A-Z™: Learn How To Build An AI | Udemy |
| • CS224d: Deep Learning for Natural Language Processing | Stanford |
| • Deep Learning for NLP at Oxford with Deep Mind | Oxford |
| • Convolutional Neural Networks for Visual Recognition | Stanford |
-

REFERENCES

Thesis Supervisor

Dr. M.A.H Akhand
Professor and Head, CSE
Khulna University of Engineering & Technology
Email: akhand@cse.kuet.ac.bd

Project Supervisor

Sheikh Imran Hossain
Assistant Professor, CSE
Khulna University of Engineering & Technology
Email: imran@cse.kuet.ac.bd

External Supervisor

Dr. Sk. Mohammad Masudul Ahsan
Professor, CSE
Khulna University of Engineering & Technology
Email: smahsan@cse.kuet.ac.bd
