Shuvozit Ghose *Curriculum vitae*

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Research Interests Computer Vision, Deep Learning, Machine Learning, Pattern Recognition, Image Processing.

Present Position Pursuing B.TECH in CSE (since August 2016).

Education

Institute of Engineering & Management, Kolkata (India) Since 2016
University: Maulana Abul Kalam Azad University of Technology
Formerly known as West Bengal University of Technology

- Computer Science & Engineering
- DGPA: Approx 8.7/10 (In 7 Semesters)
- Pursuing Bachelor of Technology (Honours)

Pangsha College, Pangsha, Rajbari (Bangladesh) 2015
- Board of Intermediate and Secondary Education, Dhaka(12^{th} Standard)
- GPA: 5.00/5.00

Yakub Ali Chowdhury Bidyapith, Pangsha, Rajbari (Bangladesh) 2013
- Board of Intermediate and Secondary Education, Dhaka (10^{th} Standard)
- GPA: 5.00/5.00

Journal Publications

1. **Shuvozit Ghose**, Abhirup Das, Ayan Kumar Bhunia, Partha Pratim Roy, "Fractional Local Neighborhood Intensity Pattern for Image Retrieval using Genetic Algorithm", **Multimedia Tools and Applications 2020, Springer** (DOI:10.1007/s11042-020-08752-6). [**PDF**] [arXiv]

   - **Highlights:**
     - A new texture descriptor has been proposed utilizing genetic algorithm for contend based image retrieval.
     - Our method has achieved superior performance in comparison to other state-of-art approaches on Brodatz texture image, Salzburg texture database, Salzburg texture database and AT&T face database. .

2. Ayan Kumar Bhunia, Ankan Kumar Bhunia, **Shuvozit Ghose**, Abhirup Das, Partha Pratim Roy, Umapada Pal "A Deep One-Shot Network for Query-based Logo Retrieval", **Pattern Recognition**, Volume 96, Pages 106965, 2019. (DOI:10.1016/j.patcog.2019.106965). [**PDF**] [**Github**] **(I.F.- 5.898)**

   - **Highlights:**
     - A scalable solution for the logo detection problem by redesigning the traditional problem setting capable of detecting small logos.
     - A query-based logo search and detection system by employing a simple, fully differentiable one-shot learning framework which is adoptable to new classes. .

Conference Papers

1. **Shuvozit Ghose**, Pinaki Nath Chowdhury, Partha Pratim Roy, Umapada Pal, "Modeling Extent-of-Texture Information for Ground Terrain Recognition", *International Conference on Pattern Recognition* **(ICPR)**, Milan, 2020.[**PDF**] [**Github**] [arXiv]

   - **Highlights:**
     - a novel approach towards ground-terrain recognition by modeling the extent of texture information to establish a balance between the order-less texture and ordered-spatial information locally.
     - introduced Intra-domain Message passing mechanism and Inter-domain Message passing module in the context of ground terrain recognition for rich feature learning. .

2. Perla Sai Raj Kishore, Ayan Kumar Bhunia, **Shuvozit Ghose**, Partha Pratim Roy, "User Constrained Thumbnail Generation Using Adaptive Convolutions", *International Conference on Acoustics, Speech, and Signal Processing* **(ICASSP)**, London, 2019.[**PDF**] [**Github**] [arXiv] [**Oral**]

   - **Highlights:**
     - A new framework for user constrained thumbnail generation using Adaptive Convolutions.
     - Our method has achieved superior performance in comparison to other conventional approaches.

Submitted Papers

1. Amandeep Kumar*, **Shuvozit Ghose***, Pinaki Nath Chowdhury, Partha Pratim Roy, Umapada Pal, "UDBNET: Unsupervised Document Binarization Network via Adversarial Game", *International Conference on Pattern Recognition* **(ICPR)**, Milan, 2020.[**PDF**] [**Github**] [arXiv]

   - **Highlights:**
     - we are the first one to introduce adversarial game in the domain of document image binarization by proposing Adversarial Texture Augmentation Network (ATANet) and Unsupervised Document Binarization Network (UDBNet).
     - We introduce a joint discriminator which tries to couple the ATANet and UDBNet so that it can tackle the dataset bias problem and perform well on the real degraded document image. .

Familiarity with DL

(i) CNN	(ii) Convolutional LSTM model	(iii) RNN/LSTM
(iv) DC-GANs	(v) GANs for Image to Image Trans.	(vi) Seq2Seq
(vii) Siamese Network	(viii) Attention based Model	(ix) VAE
(x) Domain Adaptation	(xi) Semantic Segmentation	(xii) Style Transfer

Relevant Projects

- Modeling Extent-of-Texture Information for Ground Terrain Recognition [**Tools**: Python/ Pytorch] [**Github**]
- Shadow Detection using RESNET Encoder-Decoder Network [**Tools**: Python/Pytorch] [**Github**]
- A Deep One-shot Network for Query-based Logo Retrieval [**Tools**: Python/Tensorflow]

- Object Recognition Using All CNN Network in CIFAR-10 [**Tools**: Python/Tensorflow] [**Github**]
- Triplet Dataset generation in FlickersLogos32 Dataset [**Tools**: Python] [**Github**]
- User Constrained Thumbnail Generation System [**Tools**: Python/Tensorflow]
- E-Commerce Data Analysis Using Hadoop [**Tools**: Hadoop/Hive] [**Report**]
- Smart Home Automation System using Sensors [**Tools**: Arduino/C] [**Report**]

Achievements

- Trainee at OgmaTech Lab, 2019.
- Got NPTEL Elite Certification in Deep Learning for Visual Computing, 2018.
- Got A in 17th Rock Climbing Course, 2017.
- Complete Marathon in UEM-IEM Kolkata Marathon 2017.
- Active Member of Green Revolution.
- 2nd Prize in Tabla, Bangladesh Sishu Academy Competition District Level, 2009.

Relevant Coursework

(i) Linear Algebra & Diff. Eqn. (ii) Statistics & Probability (iii) Data Structure
(iv) Object Oriented Programming (v)Algorithm (vi) Discrete Mathematics

Technical Skills

- Programming Languages: C, C++, JAVA, Python.
- Low level Programming : 8085 Assembly.
- Deep Learning Framework: Tensorflow, Pytorch.
- Big Data Platform: Hadoop, Map-Reduce,Hive, Hbase, Pig, Scoop.
- Hardware Exposure: Arduino.
- Web Platform: HTML,CSS,JavaScript.
- Mathematics: Linear-algebra, Probability, Statistics.
- Miscellaneous: OpenCV, LIBSVM library, HTK library.

Test Scores

- GRE: Total: 307, Quants: 160/170, Verbal: 147/170, AWA: 3.0
- IELTS: 6.5 (R-6.5, L-6.5, W-6.0, S-6.0)

References

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