Ayan Das

Curriculum Vitae

Contact Information

Room 03-BB-00, Alan Turing Building, CVSSP
University of Surrey, Guildford, England
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Research Interests

Computer Vision & Deep Learning

- Sketch analysis and synthesis; Intersection of Computer Graphics and Vision
- Deep Generative Models - Theory and Applications

Work

(Ongoing) Internship at MediaTek Research UK June 2022 - Present

- Working with the Deep Learning team at Cambridge led by Alberto Bernacchia
- Focused on Diffusion Probabilistic Models

Teaching Assistant (TA) at University of Surrey Jan - May 2022

- Graduate course on Image Processing & Deep Learning (EEEM063)
- Along with instructors Dr Yi-Zhe Song & Dr John Collomosse

Education

(Ongoing) University of Surrey, United Kingdom 2019 - Present

- Ph.D. student at Centre for Vision, Speech and Signal Processing
- Fully funded by iFlyTek Ph.D. Scholarship
- Thesis title (tentative): Deep generative models for scalable sketch synthesis

Institute of Engineering & Management, Kolkata, India 2013 - 2017
University: Maulana Abul Kalam Azad University of Technology (MAKAUT)

- Department of Electronics & Communication Engineering
- B.Tech Thesis: *'Gender recognition from body images using part-based model'*

Udayrajpur Hariharpur High School (WBCHSE) 2011 - 2013

- Higher Secondary Examination (12^{th} Standard)

Barasat Mahatma Gandhi Memorial High School (WBBSE) 2006 - 2011

- Secondary Examination (10^{th} Standard)

Research Experiences

2019 to now — **Area of Research: Sketch analysis with Deep Learning**
Advisor: Dr. Yi-Zhe Song, Ph.D.
- SketchX Lab, a research group focused on sketch analysis
- Co-advisors: Yongxin Yang, Timothy Hospedales (University of Edinburgh)

2018 to 2019 — **Area of Research: Medical Imaging with Deep Learning**
Advisor: Dr. Debdoot Sheet, Ph.D.
- Indian Institute of Technology Kharagpur, India
- Member of "Kharagpur Learning, Imaging and Visualization (KLIV)" research group

2015 to 2016 — **Area of Research: Evolutionary Computations & Machine Learning**
Advisor: Dr. Swagatam Das, Ph.D.
- Electronics and Communication Sciences Unit
- Indian Statistical Institute, Kolkata, India

2014 to 2015 — **Area of Research: Handwritten Text/Document Recognition**
Advisor: Prof. Partha Pratim Roy, Ph.D.
- Dept. of Computer Science.
- Indian Institute of Technology, Roorkee, India.

Projects
(Github Profile)

- rlx: A Modualr Reinforcement Learning (RL) library for research.
- A personal website (https://ayandas.me/) written in Jekyll
- Weekly/Monthly tutorials (https://ayandas.me/blogs.html) on wide range of intermediate or advanced topics
- Worked in project "MIRIAD" funded by **Intel India Pvt. Ltd.**

Publications
(G.Scholar Profile)

1. (Conference) **A. Das**, Y. Yang, T. Hospedales, T. Xiang, Y. Song, "SketchODE: Learning neural sketch representation in continuous time", International Conference on Learning Representations (ICLR), 2022 .
2. (Conference) **A. Das**, Y. Yang, T. Hospedales, T. Xiang, Y. Song, "Cloud2Curve: Generation and Vectorization of Parametric Sketches", Computer Vision and Pattern Recognition (CVPR) 2021.
3. (Conference) A. K. Bhunia*, **A. Das***, U. Muhammad*, Y. Yang, T. Hospedales, T. Xiang, Y. Gryaditskaya, Y. Song, "Pixelor: A Competitive Sketching AI Agent. So you think you can sketch?", SIGGRAPH Asia 2020. (*Equal Contribution)
4. (Conference) **A. Das**, Y. Yang, T. Hospedales, T. Xiang, Y. Song, "BézierSketch: A generative model for scalable vector sketches", European Conference on Computer Vision (ECCV) 2020.
5. (Journal) P.P. Roy, A.K. Bhunia, **A.Das**, P.Dhar, U.Pal, "Keyword spotting in doctor's handwriting on medical prescriptions", Expert Systems with Applications.
6. (Journal) **A.Das**, S.Das, "Feature Weighting and Selection with a Pareto-optimal Trade-off between Relevancy and Redundancy", Pattern Recognition Letters.
7. (Journal) P.P.Roy, A.K.Bhunia, **A.Das**, P.Dey, U.Pal, "HMM-based Indic Handwritten Word Recognition using Zone Segmentation", Pattern Recognition.
8. (Conference) **A.Das**, A.Bhunia, P.P.Roy, U.Pal, "Handwritten Word Spotting in Indic Scripts using Foreground and Background Information", The 3^{rd} IAPR Asian Conference on Pattern Recognition.
9. (Conference) A.K.Bhunia, **A.Das**, P.P.Roy, U.Pal, "A Comparative Study of Features for Handwritten Bangla Text Recognition", 13^{th} International Conference on Document Analysis and Recognition (ICDAR), pp. 636-640.

Professional & Voluntary work

- Serving as reviewer for top conferences (CVPR, ICCV, ECCV, BMVC, ACM SIGGRAPH, SIGGRAPH Asia) and journals (Elsevier Neural Networks, TMLR).
- Intel Student Ambassador (Asia Pacific & Japan) for Artificial Intelligence (A.I.)
- Former member of "Innovation and Entrepreneurship Development Center (IEDC Lab)" funded by "Department of Science & Technology (DST), Govt. of India"

Technical Skills

- Programming Languages: C/C++, MATLAB, Python, Julia
- ML/DL framework: PyTorch (Highly proficient), Tensorflow
- Mathematics: Linear-algebra, Probability, Statistics
- HPC: Cluster management, MPI, OpenMP
- Web: Basics of front-end, back-end, Flask, REST APIs

References

Will be provided upon request.