Aneeshan Sain *Curriculum vitae*

CONTACT INFORMATION

Room 03-BB-00, Alan Turing Building, CVSSP
University of Surrey, Guildford, Surrey
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RESEARCH INTERESTS

Computer Vision, Deep Learning, Sketch Analysis

EDUCATION

University of Surrey, UK since Oct 2019

- Centre for Vision, Speech and Signal Processing (CVSSP)
- Department of Electrical and Electronic Engineering
- Faculty of Engineering and Physical Sciences
- Current Status: Postgraduate Research Student

Institute of Engineering & Management, Kolkata (India) 2017
University: Maulana Abul Kalam Azad University of Technology
Formerly known as West Bengal University of Technology

- Department of Electrical Engineering
- DGPA: 8.14/10 (Including all 8 Semesters)
- Current Status: Graduated with Bachelor of Technology in Electrical Engineering
- B.Tech Thesis: *'Intelligent Battery Management System'*

St. Xaviers Collegiate School, Kolkata (India) 2013
- Indian School Certificate(12^{th} Standard or A-level)
- Aggregrate: 94.3%

St. Xaviers Collegiate School, Kolkata (India) 2011
- Indian Certificate for Secondary Education (10^{th} Standard or O-level)
- Aggregrate: 95.2%

RESEARCH EXPERIENCES

University of Surrey, UK since Oct 2019
- PhD Student
- Under: Prof. Yi-Zhe Song and Prof. Tao Xiang

Indian Statistical Institute (ISI), Kolkata, India Feb 2016 - Dec 2017
- Research Intern
- Under Prof. Umapada Pal and Dr. Partha Pratim Roy

Indian Institute of Technology Roorkee (IITR), India Dec 2015 - Jan 2016
- Undergraduate Student Researcher
- Under Dr. Partha Pratim Roy

TECHNICAL SKILLS

- Programming Languages: MATLAB, Python, JCL, COBOL.
- ML/DL Framework: Pytorch (Proficient).
- Mathematics: Linear-algebra, Probability, Statistics, Calculus.
- Web: Basics of HTML and CSS.
- Miscellaneous: LATEX, Version control (Git), OpenCV.

Publications

google-scholar

1. Democratising 2D Sketch to 3D Shape Retrieval Through Pivoting.
   Pinaki Nath Chowdhury, Ayan Kumar Bhunia, **Aneeshan Sain**, Subhadeep Koley, Tao Xiang , Yi-Zhe Song.
   IEEE International Conference on Computer Vision (**ICCV**), **2023**.

2. CLIP for All Things Zero-Shot Sketch-Based Image Retrieval, Fine-Grained or Not.
   Aneeshan Sain, Ayan Kumar Bhunia , Pinaki Nath Chowdhury, Subhadeep Koley, Tao Xiang , Yi-Zhe Song.
   IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2023**.

3. Exploiting Unlabelled Photos for Stronger Fine-Grained SBIR.
   Aneeshan Sain, Ayan Kumar Bhunia, Vaishnav Potlapalli, Pinaki Nath Chowdhury, Tao Xiang , Yi-Zhe Song.
   IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2023**.

4. What Can Human Sketches Do for Object Detection?.
   Pinaki Nath Chowdhury, Ayan Kumar Bhunia, **Aneeshan Sain**, Subhadeep Koley, Tao Xiang , Yi-Zhe Song.
   IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2023**.

5. Picture that Sketch: Photorealistic Image Generation from Abstract Sketches.
   Subhadeep Koley, Ayan Kumar Bhunia, **Aneeshan Sain**, Pinaki Nath Chowdhury, Tao Xiang , Yi-Zhe Song.
   IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2023**.

6. SceneTrilogy: On Human Scene-Sketch and its Complementarity with Photo and Text.
   Pinaki Nath Chowdhury, Ayan Kumar Bhunia, **Aneeshan Sain**, Subhadeep Koley, Tao Xiang , Yi-Zhe Song.
   IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2023**.

7. Sketch2Saliency: Learning to Detect Salient Objects from Human Drawings.
   Ayan Kumar Bhunia, Subhadeep Koley, Amandeep Kumar, **Aneeshan Sain**, Pinaki Nath Chowdhury, Tao Xiang , Yi-Zhe Song.
   IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2023**.

8. FS-COCO: Towards Understanding of Freehand Sketches of Common Objects in Context.
   Pinaki Nath Chowdhury, **Aneeshan Sain**, Ayan Kumar Bhunia, Tao Xiang, Yulia Gryaditskaya, Yi-Zhe Song.
   European Conference on Computer Vision (**ECCV**), **2022**.

9. Adaptive Fine-Grained Sketch-Based Image Retrieval.
   Ayan Kumar Bhunia, **Aneeshan Sain**, Parth Shah, Animesh Gupta, Pinaki Nath Chowdhury, Tao Xiang, Yi-Zhe Song.
   European Conference on Computer Vision (**ECCV**), **2022**.

10. Sketch3T: Test-time Training for Zero-Shot SBIR.
    Aneeshan Sain, Ayan Kumar Bhunia, Vaishnav Potlapalli, Pinaki Nath Chowdhury, Tao Xiang , Yi-Zhe Song.
    IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2022**.

11. Doodle It Yourself: Class Incremental Learning by Drawing a Few Sketches.
Ayan Kumar Bhunia, Viswanatha Reddy Gajjala, Subhadeep Koley, Rohit Kundu, **Aneeshan Sain**, Tao Xiang , Yi-Zhe Song.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2022**.

12. Sketching without Worrying: Noise-Tolerant Sketch-Based Image Retrieval.
Ayan Kumar Bhunia, Subhadeep Koley, Abdullah Faiz Ur Rahman Khilji, **Aneeshan Sain**, Pinaki Nath Chowdhury, Tao Xiang , Yi-Zhe Song.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2022**.

13. Partially Does It: Towards Scene-Level FG-SBIR with Partial Input.
Pinaki Nath Chowdhury, Ayan Kumar Bhunia, Viswanatha Reddy Gajjala, **Aneeshan Sain**, Tao Xiang , Yi-Zhe Song.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2022**.

14. Text is Text, No Matter What: Unifying Text Recognition using Knowledge Distillation.
Ayan Kumar Bhunia, **Aneeshan Sain**, Pinaki Nath Chowdhury, Yi-Zhe Song.
IEEE International Conference on Computer Vision (**ICCV**), **2021**.

15. Towards the Unseen: Iterative Text Recognition by Distilling from Errors.
Ayan Kumar Bhunia, Pinaki Nath Chowdhury, **Aneeshan Sain**, Yi-Zhe Song.
IEEE International Conference on Computer Vision (**ICCV**), **2021**.

16. Joint Visual Semantic Reasoning: Multi-Stage Decoder for Text Recognition.
Ayan Kumar Bhunia, **Aneeshan Sain**, Amandeep Kumar, Shuvozit Ghose, Pinaki Nath Chowdhury, Yi-Zhe Song.
IEEE International Conference on Computer Vision (**ICCV**), **2021**.

17. StyleMeUp: Towards Style-Agnostic Sketch-Based Image Retrieval.
Aneeshan Sain, Ayan Kumar Bhunia, Yongxin Yang, Tao Xiang, Yi-Zhe Song.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2021**.

18. PQA: Perceptual Question Answering.
Yonggang Qi, Kai Zhang, **Aneeshan Sain**, Yi-Zhe Song.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2021**.

19. More Photos are All You Need: Semi-Supervised Learning for Fine-Grained Sketch Based Image Retrieval.
Ayan Kumar Bhunia, Pinaki Nath Chowdhury, **Aneeshan Sain**, Yongxin Yang, Tao Xiang, Yi-Zhe Song.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2021**.

20. MetaHTR: Towards Writer-Adaptive Handwritten Text Recognition.
Ayan Kumar Bhunia, Shuvozit Ghose, Amandeep Kumar, Pinaki Nath Chowdhury, **Aneeshan Sain**, Yi-Zhe Song.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), **2021**.

21. S^3Net:Graph Representational Network For Sketch Recognition.
Lan Yang, **Aneeshan Sain**, Linpeng Li, Yonggang Qi, Honggang Zhang, Yi-Zhe Song.
International Conference on Multimedia & Expo (**ICME**), **2020**.

22. Cross-Modal Hierarchical Modelling for Fine-Grained Sketch Based Image Retrieval.
Aneeshan Sain, Ayan Kumar Bhunia, Yongxin Yang, Tao Xiang, Yi-Zhe Song.
British Machine Vision Conference (**BMVC**), **2020** [**Oral**].

23. Zone-based keyword spotting in Bangla and Devanagari documents.
Ayan Kumar Bhunia, Partha Pratim Roy, **Aneeshan Sain**, Umapada Pal.
Multimedia Tools and Applications, Springer US, **2020**.

24. Improving Document Binarization via Adversarial Noise-Texture Augmentation.
Ankan Kumar Bhunia, Ayan Kumar Bhunia, **Aneeshan Sain**, Partha Pratim Roy.
International Conference on Image Processing (**ICIP**), IEEE **2019**.

25. Background Subtraction based on Integration of Alternative Cues in Freely Moving Camera.
Chenqiu Zhao, **Aneeshan Sain**, Ying Qu, Yongxin Ge, Haibo Hu.
IEEE Transactions on Circuits and Systems for Video Technology **(TCSVT)**, **2019**.

26. Indic Handwritten Script Identification using Offline-Online Multimodal Deep Network.
Ayan Kumar Bhunia, Subham Mukherjee, **Aneeshan Sain**, Ankan Kumar Bhunia,
Partha Pratim Roy, Umapada Pal.
Information Fusion, Elsevier, **2018**.

27. Multi-Oriented Text Detection and Verification in Video Frames and Scene Images.
Aneeshan Sain, Ayan Kumar Bhunia, Partha Pratim Roy, Umapada Pal.
Neurocomputing, Elsevier, **2018**.

Professional Experience

Organisation	: Cognizant Technological Solutions
Job Title	: Programmer Analyst
Technology Used	: JCL, COBOL, Assembly Language (HLA)
Duration	: Dec 2017 to Sep 2019

Organisation	: iSIZE Limited
Job Title	: Research Scientist
Technology Used	: PyTorch
Duration	: July 2022 to Feb 2023 Part-time : March 2023 to present Full-time

References

Will be provided upon request.