

Soumen Basu

Vision and Graphics Lab,
405 Bharti Building, IIT Delhi
Hauz Khas, New Delhi 110016, India

Email: soumen.basu@cse.iitd.ac.in
Web: <https://www.cse.iitd.ac.in/~soumen>
Phone: +91-9051501506

Research Interests

- Computer Vision, Deep Learning, Medical Image Analysis
- Curriculum Learning, Contrastive Learning
- Weakly-supervised, semi-supervised, unsupervised methods
- Explainable AI

Education

- **Ph.D., Department of Computer Science and Engineering,**
Indian Institute of Technology, Delhi, India
Advisor: Prof. Chetan Arora
July 2019 – Current (Expected Dec 2023)

Publications (Journal and Core A* conferences)

1. **S. Basu**, M. Gupta, P. Rana, P. Gupta and C. Arora. “*Surpassing the Human Accuracy: Detecting Gallbladder Cancer from USG Images with Curriculum Learning*”. IEEE/CVF **CVPR 2022**.
2. **S. Basu**, S. Singla, M. Gupta, P. Rana, P. Gupta and C. Arora. “*Unsupervised Contrastive Learning of Image Representations from Ultrasound Videos with Hard Negative Mining*”. **MICCAI 2022**.
3. **S. Basu**, M. Gupta, P. Rana, P. Gupta and C. Arora. “*RadFormer: Transformers with Global-Local Attention for Interpretable and Accurate Gallbladder Cancer Detection*”. **Elsevier Medical Image Analysis** (Impact Factor: 13.828).

Professional Services

- Program Committee Member at AAAI 2023
- Reviewer at CVPR 2023
- Reviewer at IPCAI 2023

Work Experience

- **Doctoral Researcher, and Prime Minister’s Research Fellow**
[Indian Institute of Technology Delhi](#)
July 2019 – Till Now
- **Research Assistant**, Department of Computer Science and Engineering,
[The Pennsylvania State University](#), USA
August 2018 – May 2019
- **Member of Technical Staff**, Adobe Ad-cloud Team
[Adobe Systems India](#), Bangalore
July 2015 – July 2018

Course Projects

- Object Detection for Anti-Poaching Aerial Patrolling of Protected Areas
- Text Object Detection from Road-Signboards
- Automated X-Ray report generation from X-Ray images
- Segmentation of Surgical Tools in Endoscopy Images
- Automated digitization of hand-written forms

Awards

- Recipient of MICCAI 2022 Student Travel Award
- CVPR 2022 Travel Grant
- Recipient of the highly prestigious *Prime Minister’s Research Fellowship*, Government of India.
- Recipient of Alumni Doctoral Grant, Department of Computer Science, IIT Delhi
- Winner (2nd position) in ICVGIP 2020 Object Detection Challenge

Technical Skills

- Python, PyTorch, OpenCV, Keras, Scikit-learn
- Computer Vision, Deep Learning, Git, Bash, Flask, Latex