

Soumen Basu

Email: soumen@ai.iitkgp.ac.in

 [Google Scholar](#)  [LinkedIn](#)

Areas of Interest

- Computer Vision, Deep Learning, AI in Healthcare

Education

Ph.D. Department of Computer Science
Indian Institute of Technology (IIT) Delhi

(07/2019 – 07/2024)

- *Area:* Computer Vision, Medical Image Analysis, Deep Learning
- *Advisor:* Prof. Chetan Arora
- *Thesis Title:* Deep Learning Models for Detecting Gallbladder Cancer from Ultrasound
- Prime Minister's Research Fellow, Outstanding Teaching Assistant Award

Work Experience

Assistant Professor – IIT Kharagpur

(02/2025 – 04/2026)

- Department of Artificial Intelligence
- Computer Vision, Medical Image Analysis, AI in Healthcare

Research Scientist – Meta, New York

(02/2025 – 04/2026)

- *Area:* Monetization, Foundation Models
- Improving state-of-the-art large foundation models for increasing revenue shares.

Senior Chief Engineer – Samsung R&D, Bangalore

(03/2024 – 01/2025)

- *Area:* Computer Vision, Machine Learning
- On-device Segmentation Foundational Models
- Submitted 1 US patent application on temporally stable person segmentation in videos

Applied Scientist Intern – Amazon Inc.

(07/2023 – 12/2023)

- *Area:* Computer Vision, Machine Learning
- Stray object detection in conveyor belts, optimizing production.
- Saved \$120,000/ year in license costs with an in-house model.

Member of Technical Staff – Adobe Systems, Bangalore

(07/2015 – 07/2018)

- Developed scalable backend APIs for digital ads data pipeline

Publications

Journal

- [1] **S. Basu**, M. Gupta, P. Rana, P. Gupta, C. Arora. “*RadFormer: Transformers with global-local attention for interpretable and accurate Gallbladder Cancer detection*”, *Medical Image Analysis*, 2023. (Impact Factor: 11.8, Q1) [[Paper](#)]
- [2] P. Gupta, **S. Basu**, et al. “*Deep-learning enabled ultrasound based accurate detection of gallbladder cancer: A prospective diagnostic study*”, *The Lancet Regional Health – South East Asia*, 2023. (Impact Factor: 6.2, Q1) [[Paper](#)]
- [3] P. Gupta, **S. Basu**, et al. “*Deep learning models for differentiation of xanthogranulomatous cholecystitis and gallbladder cancer on ultrasound*”, *Indian Journal of Gastroenterology*, 2023. (Impact Factor: 2.1) [[Paper](#)]
- [4] P. Gupta, **S. Basu**, C. Arora. “*Applications of artificial intelligence in biliary tract cancers*”, *Indian Journal of Gastroenterology*, 2024. (Impact Factor: 2.1) [[Paper](#)]

Conference

- [1] **S. Basu**, M. Gupta, P. Rana, P. Gupta, C. Arora. “Surpassing the Human Accuracy: Detecting Gallbladder Cancer from USG with Curriculum Learning”, *CVPR* 2022 (A*). [[Paper](#)]
- [2] **S. Basu**, S. Singla, M. Gupta, P. Rana, P. Gupta, C. Arora. “Unsupervised Contrastive Learning of Image Representations from Ultrasound Videos with Hard Negative Mining”, *MICCAI* 2022 (A). [[Paper](#)]
- [3] **S. Basu**, A. Papanai, M. Gupta, P. Gupta, C. Arora. “Gall Bladder Cancer Detection from US Images with Only Image Level Labels”, *MICCAI* 2023 (A). [[Paper](#)]
- [4] M. Gupta, **S. Basu**, et al. “How reliable are the metrics used for assessing reliability in medical imaging?”, *MICCAI* 2023 (A, Oral Presentation) . [[Paper](#)]
- [5] **S. Basu**, M. Gupta, C. Madan, P. Gupta, C. Arora. “FocusMAE: Gallbladder Cancer Detection from Ultrasound Videos with Focused Masked Autoencoders”, *CVPR* 2024 (A*). [[Paper](#)]
- [6] C. Madan, M. Gupta, **S. Basu**, P. Gupta, C. Arora. “LQ-Adapter: ViT-Adapter with Learnable Queries for Gallbladder Cancer Detection”, *WACV* 2025 (A, Oral Presentation). [[Paper](#)]
- [7] C. Madan, A. Satia, **S. Basu**, P. Gupta, U. Dutta, C. Arora. “Focus on Texture: Rethinking Pre-training in Masked Autoencoders for Medical Image Classification”, *MICCAI* 2025 (A). [[Paper](#)]
- [8] R. Kumar, H. Rahaman, S. Jha, D. Saha, H. Rahaman, **S. Basu**. “EntroMix: Clinically-Aware Self-Paced Generative Augmentation for Imbalanced Medical Image Classification”, *CVPRW* 2026.

Mentorship Experience

- Mentored 2 Undergrads, 2 Masters student, and 3 RAs to become successful co-authors in CVPR, MICCAI, WACV. Delivered high-quality publications including two oral papers.
- Led a team of 6 Teaching Assistants to manage the Machine Learning course with 150 students. Received the Outstanding TA award for exceptional leadership

Grants and Awards

- Prime Minister’s Research Fellowship
- Oral Presentation at MICCAI 2023 (3% of the submission)
- Oral Presentation at WACV 2025 (8% of the submissions)
- Outstanding Teaching Assistant Award for Machine Learning course, IIT Delhi (2023)
- MICCAI STAR (Student Travel) Award – first authors of highest quality papers (2022).
- CVPR Travel Grant (2022)
- Winner (2nd) of Object Detection Challenge, ICVGIP 2020

Reviewer Experience

Journals

- Nature Digital Medicine, Nature Scientific Reports, International Journal of Computer Vision (IJCV), IEEE Transactions on Multimedia, ACM Transactions on Computing for Healthcare

Conferences

- CVPR, ICCV, ECCV, MICCAI, AAAI, IJCAI

Media Coverage

- News Medical [Link](#)
- Indian Express [Link](#)
- Economic Times [Link](#)
- Business Standard [Link](#)
- The Week [Link](#)