Koushik Bhat

Bengaluru, India 560064

📞 8762978130　✉ koushikbhat25@gmail.com　in [LinkedIn](#)　 [Website](#)

Education

Indian Institute of Technology Madras　　　　　　　　　　　　　**July 2021 – Aug 2024**
Master of Science (by Research) — Advisor Prof. Mohanasankar Sivaprakasam　　　　*Chennai, TN*
Thesis: From Sections to Structures: Cellular-Level 3D Brain Reconstruction using Video Frame Interpolation

B.M.S College of Engineering　　　　　　　　　　　　　　　**Aug 2016 – Aug 2020**
Bachelor of Engineering　　　　　　　　　　　　　　　　　　*Bengaluru, KA*

Research Interests

- Image Processing
- Computer Vision
- Machine Learning
- Deep Learning
- Generative Models (GANs, Diffusion)
- LLM
- Multimodal AI

Experience

Collins Aerospace - Applied Research and Technology　　　　　　**Jul 2024 - Present**
Applied Research Engineer　　　　　　　　　　　　　　　　*Bengcaluru, KA*

- Built LLM-powered system requirement generator for aerospace protocols—demonstrating semantic parsing and grounding in technical documents (under patent review).
- Created AR-based model targeting using ARKit for iOS—improving spatial registration accuracy for field diagnostics.
- Optimized OCR for handheld devices, reducing data entry errors and enhancing process efficiency by 5x, significantly improving operational workflows.

Sudha Gopalakrishnan Brain Centre　　　　　　　　　　　　**Feb 2022 – Aug 2024**
Research Associate　　　　　　　　　　　　　　　　　　　*Chennai, TN*

- Designed a novel no-reference alignment pipeline for 2D histological slices, enabling 3D reconstructions at cellular resolution (View Interactive 3D Viewer).
- Developed cell segmentation and visualization tools that were adopted by research labs, accelerating neurobiology research workflows.

Orxa Energies　　　　　　　　　　　　　　　　　　　　**Feb 2020 – Sept 2020**
Electronics Engineer　　　　　　　　　　　　　　　　　　*Bengaluru, KA*

- Analyzed Li-ion battery life cycles to identify performance factors.
- Engineered automated circuitry for real-time battery health monitoring.

Technical Skills

Languages: Python, C, C++, C#
Developer Tools: VS Code, Unity, Jupyter, Git, AWS, MATLAB, GitHub
Technologies/Frameworks: CUDA, ARKit, nVIndex, OpenCV, TensorFlow, PyTorch

Achievements

- Secured Funding for the Innovation project - "CodeTangle".
- 2 Patents under review Collins Aerospace.
- Awarded the **SAMSUNG IITM-Pravartak Post Graduate Fellowship**
- Ranked in the top 2.4% of 87,559 candidates in the GATE exam, with specialization in Electrical Engineering.

Publications

- [**JBHI 2025**] Ayantika Das, Moitreya Choudary, **Koushik Bhat** , Keerthi Ram, Mihail Botha, Mohanasankar Sivaprakasam. "PosDiffAE: Position Diffusion Auto Encoder"

- [**ISBI 2025**] **Koushik Bhat**, Ayantika Das, Supriti Mulay, , Keerthi Ram, Mohanasankar Sivaprakasam. "MEDFRAMEALIGN: 3D Histological Reconstructions using Video Frame Interpolation"

- [**JCN 2024**]Keerthi Ram, **Koushik Bhat** , Mohanasankar Sivaprakasam. "DHARANI: A 3D Developing Human-brain Atlas Resource to Advance Neuroscience Internationally- Integrated Multimodal Imaging and High-resolution Histology of the second trimester." The Journal of Comparative Neurology, 2024.

- Supriti Mulay, **Koushik Bhat**, Keerthi Ram, Mohanasankar Sivaprakasam. "CasGAN: Cascaded GAN for multimodal cell segmentation." Under Review, 2024.