JOSHUA PETER EBENEZER

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SUMMARY

Staff Research Engineer with 6+ years building production-grade deep learning systems for computational photography and video quality. Led AI models deployed on millions of devices; 5 US patents, CVPR/TIP/ICIP/ICASSP publications, and direct ownership of core camera pipelines.

EDUCATION

MS+PhD, Electrical & Computer Engg., The University of Texas at Austin 2019-2023
Supervisor: Prof. Alan Bovik

B. Tech. (Hons.), **Electronics & Electrical Comm. Engg.**, IIT Kharagpur, 2015-2019
Minor in Computer Science and Engineering, Institute Rank **3/643**
Nilanjan Ganguly Memorial Award for best thesis in ECE

EXPERIENCE

Staff Research Engineer - Samsung Research America Mar 2025 – Present

- Led end-to-end development of production AI models for **Tele1, Max Mode, and Extreme Low-Light Night Mode** pipelines, deployed across **>30 million** flagship Samsung camera systems. Drove model architecture, training strategy, and data processing for all Night Mode scenarios; resulted in **2 US patents** and a **CVPR 2025 publication**.

Senior Research Engineer - Samsung Research America Jun 2023 – Mar 2025

- Owned image registration and alignment systems for **Super-Resolution** software for telephoto cameras. Developed AI training strategies for **Night Mode**, including novel ground truth rendering pipelines and specialized loss designs. Filed **2 US patents**.

Applied Science Intern - Amazon Prime Video May-Aug 2020, May-Aug 2021

- Designed large-scale subjective video quality studies involving 750 videos and 95 participants to inform bitrate ladder design and developed deep learning methods to detect audio-video synchronization errors in live sports broadcasts.

PhD - The University of Texas at Austin Aug 2019 - May 2023

- Developed video quality metrics for live streaming and HDR video, in collaboration with Amazon Prime Video; work informed evaluation of scaled and compressed video pipelines.

SELECTED PUBLICATIONS

Full list: Google Scholar (340+ citations, h-index 11)

- Fadeel Sher Khan, **J. P. Ebenezer** et al.; "MFSR-GAN: Multi-Frame Super-Resolution with Handheld Motion Modeling" CVPR W, 2025, pp. 800-809
- **J. P. Ebenezer** et al., "HDR or SDR? A Subjective and Objective Study of Scaled and Compressed Videos," in IEEE Transactions on Image Processing, vol. 33, pp. 3606-3619, 2024, doi: 10.1109/TIP.2024.3404890.,
- **J. P. Ebenezer** et al., , "ChipQA: No-Reference Video Quality Prediction via Space-Time Chips," in IEEE Transactions on Image Processing, vol. 30, pp. 8059-8074, 2021, doi: 10.1109/TIP.2021.3112055.

SKILLS

- **Deep Learning**: PyTorch, TensorFlow, diffusion models, GANs, multi-frame SR
- **Computational Photography**: image registration, HDR, Night Mode, low-light imaging
- **Image/Video Quality**: subjective studies, NR VQA metrics, streaming & HDR evaluation
- **Data & Training**: large-scale data processing, loss design, evaluation pipelines