

Joshua P. Ebenezer, Ph.D.

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Summary

Experienced Research Engineer specializing in computational photography, generative image restoration, and image and video quality assessment. Led production AI for Samsung flagship cameras and Gallery applications used by tens of millions of devices. Author of 19 publications and 9 U.S. patents spanning generative image restoration, computational photography, and video quality assessment.

Experience

Senior CV/ML Engineer, Apple October 2026 – Present

- Working on Generative AI models for Apple Creator Studio Apps.

Staff Research Engineer II, Samsung Research America Sep 2026 – October 2026

- Led the Advanced R&D Group as Team Lead.

Staff Research Engineer, Samsung Research America Mar 2025 – August 2026

- Samsung Gallery Remaster: Led team on synthetic data, foundation-model adaptation, distillation, and GenAI restoration pipelines (3 patents).
- Galaxy S26 Night Mode: Drove architecture and training for all Night Mode scenarios; led Tele1/Max Mode production models deployed to >30M devices (<5s latency, 3 patents, 3 CVPR-W papers).

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

- Tele-Tetra SR (Galaxy S24): Owned image registration and alignment systems.
- Night Mode (Galaxy S25): Developed data curation, GT rendering pipelines, and GAN/feature losses to enhance realism and reduce hallucinations (2 patents).

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

- Designed subjective video quality studies (750 videos, 95 users) for bitrate ladders and built deep learning models for live sports AV-sync detection (1 patent).

PhD, The University of Texas at Austin Aug 2019 – May 2023

- Developed live streaming and HDR video quality metrics with Amazon Prime Video, deployed in production (Amazon & VideoClarity).

Patents

- Image Alignment for Multi-frame Fusion of Tetra data** (Non-Provisional Application) Joshua Peter Ebenezer, Haegeun Lee, Hamid Rahim Sheikh, October 10, 2024, 18/911,561
- Detecting audio-video desynchronization** (Granted) Yongjun Wu, Joshua Ebenezer, Sriram Sethuraman, Hai Wei, Zongyi Liu, May 17, 2022, 17/247,065
- 7 additional patents filed from 2025–present, not yet public.

Technical Skills

Generative Image Models, Diffusion Models, Flow Matching, Vision-Language Models, Vision Transformer Architectures, Image Restoration, Multi-frame Super Resolution, Computational Photography, Image Signal Processing, PyTorch, CUDA, Distributed Training, Edge Deployment, Distillation, C++, Python

Education

MS+PhD, Electrical and Computer Engineering

2019 – 2023

University of Texas at Austin • Supervisor: Prof. Alan Bovik

- Cockrell Graduate Fellowship Award

B.Tech. (Hons.), Electronics & Electrical Communication Engineering

2015 – 2019

Indian Institute of Technology Kharagpur, India • Minor in Computer Science and Engineering

- CGPA 9.77/10; Institute Rank 3 among 643 B.Tech. undergraduates
- Nilanjan Ganguly Memorial Award for Best Undergraduate Thesis

Publications and Preprints

For the full list see my Google Scholar profile — 400+ citations, h-index 13.

1. **DRIFT: Deep Restoration, ISP Fusion, and Tonemapping**
J.P. Ebenezer et al. (CVPR-W 2026)
2. **GenMFSR: Generative Multi-Frame Image Restoration and Super-Resolution**
H. Weligampola, J.P. Ebenezer et al. (CVPR-W 2026)
3. **MFSR-GAN: Multi-Frame Super-Resolution with Handheld Cameras**
F.S. Khan, J.P. Ebenezer et al. (CVPR-W 2025)
4. **HDR or SDR? A Subjective and Objective Study of Scaled and Compressed Videos**
J.P. Ebenezer et al. (IEEE TIP 2024)
5. **HDR-ChipQA: No-reference quality assessment on High Dynamic Range Videos**
J.P. Ebenezer et al. (Signal Processing: Image Communication 2024)
6. **Making Video Quality Assessment Models Robust to Bit Depth**
J.P. Ebenezer et al. (IEEE SPL 2023)
7. **Subjective assessment of High Dynamic Range Videos under Different Ambient Conditions**
Z. Shang, J.P. Ebenezer et al. (IEEE TIP 2023)
8. **Subjective and Objective Quality Assessment of High-Motion Sports Videos at Low-Bitrates**
J.P. Ebenezer et al. (IEEE ICIP 2022)
9. **ChipQA: No-reference Video Quality Prediction via Space-Time Chips**
J.P. Ebenezer et al. (IEEE TIP 2021)
10. **Assessment of Subjective and Objective Quality of Live Streaming Sports Videos**
Z. Shang, J.P. Ebenezer et al. (PCS 2021), IEEE, 2021.
11. **Detection of Audio-Video Synchronization Errors via Event Detection**
J.P. Ebenezer et al. (ICASSP 2021), pp. 4345–4349, IEEE, 2021.
12. **No-reference Video Quality Assessment Using Space-Time Chips**
J.P. Ebenezer et al. (IEEE MMSP 2020), pp. 1–6, IEEE, 2020.
13. **Single Image Haze Removal Using Conditional Wasserstein GANs**
J.P. Ebenezer et al. (EUSIPCO 2019), pp. 1–5, IEEE, 2019.