Nikhil Gandudi Suresh

+1 (858) 319-7801 ◇ ngandudisuresh@ucsd.edu ◇ linkedin.com/in/nikhilgandudi/ ◇ gsnikhil.github.io

EDUCATION

University of California San Diego, Master of Science — Sep 2023 - Mar 2025
Electronics and Computer Engineering, **Signal and Image Processing** — 3.81/4.0 GPA
Relevant Coursework: Computer Architecture, GPU Programming, Image Processing, Computer Vision, Computational Photography, Linear Algebra

National Institute of Technology Karnataka, Surathkal, Bachelor of Technology — 2016 - 2020
Electronics and Communication Engineering — 9.3/10 GPA

SKILLS

Programming Languages Python, C, C++, JavaScript/TypeScript
Other PyTorch, Git, Deep Learning, Algorithms, Image Processing, CUDA Programming

EXPERIENCE

Apple Inc. — San Diego, California
Platform Architecture Intern - Video Codec Team — *Jun 2024 - Sep 2024*

- Evaluated the optical flow-based motion vector refinement algorithm by implementing hardware constraints and analyzing their impact on coding efficiency using a C-model that simulated the hardware environment.
- Achieved equivalent BD-rate efficiency using only 25% of the computational resources in the optical flow method through targeted optimizations.

Samsung Semiconductors India Research — Bengaluru, India
Associate Staff Engineer - CMOS Image Sensor Algorithm Team — *Apr 2023 - Aug 2023*

- Led algorithm and firmware development of novel data compression for image sensor's OTP (One Time Programmable) memory which resulted in 22% higher data storage in the same silicon area.
- Successfully modeled parts of image processing pipeline which was used as a reference to validate the hardware.

Samsung Semiconductors India Research — Bengaluru, India
Engineer - CMOS Image Sensor Algorithm Team — *Aug 2020 - Mar 2023*

- Developed and implemented a novel low-power, low-resolution motion detection algorithm for Bayer images. Conducted thorough testing and evaluation, resulting in one of the first low-cost CMOS image sensors supporting motion detection in Always-On (AON) mode.
- Revamped sanity checking of image sensor operating modes by automating the process, resulting in reduction of testing time by 85%.

PROJECTS

Star Trail Reversal - Developed computational techniques for star trail removal in long-exposure astrophotography using non-blind deconvolution algorithms. (Link)

Image Inpainting using PConv Networks - Developed and extended a deep learning-based image inpainting model using Partial Convolutions in PyTorch, evaluated on CelebA-HQ dataset. Implemented mask tuning, progressive inpainting, and super-resolution techniques to enhance image reconstruction quality. (Link)

Bayer Image Viewer - Built a custom RAW Bayer image viewer using Python (PyQt) for Samsung engineers, used by 50+ engineers across algorithm development and post-silicon validation teams.

LEADERSHIP

- Industry Liaison, the Graduate Student Council at UC San Diego — *Oct 2023 - Present*
- Head of E-Cell, the Entrepreneurship Club at NITK Surathkal — *Mar 2019 - Mar 2020*