Ashish Bhaskar

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Education

Indian Institute of Technology, Delhi 7.78/10
Bachelor of Technology in Electrical Engineering *July 2019 – 2023*

Rajat Public School, Sikar 93.60 %
Class XII *April 2018 – April 2019*

Work Experience

Software Engineer | *Samsung Research Institute, Bangalore* Aug 2023 - Present

- Working with Camera System team of Visual Intelligence group
- Low light video enhancement for low & mid-tier phones: Employed heterogeneous computing (task offloading between GPU & CPU) along with multithreading & assembly optimizations
- Bundled it to provide custom APIs for different architectures using Android NDK & integrated it into the camera pipeline
- Reduced the time by 7.5X (120ms/frame using OpenCV to 16ms/frame), which made it a USP solution in Samsung cameras

Developer Intern | *Samsung Research Institute, Bangalore* June 2022 - Aug 2022

- Automated the debugging process by implementing a C++ program to collect and analyze the data in a single call
- Reduced overall debugging time and documented the program by writing detailed technical descriptions

Research Intern | *Seoul National University, South Korea* May 2021 - July 2021

- Dumped and Disassembled OpenCL kernels of Intel Architecture to generate the corresponding Assembly code
- Profiled the performance using hand-made OpenCL microkernels with different properties and studied OpenCL execution model, integrated architectures and their memory architecture.

Projects

Red Lesion Segmentation for Early DR Screening | *Prof. Monika Agarwa* Aug 2022 - Dec 2022

- Early stage Diabetic Retinopathy screening from 2D fundus image of Retina by detecting presence of Red Lesions
- Application of ML, Image Processing: handcrafted intensity-based features to improve false negatives in model

Pathological speech signal analysis and classification using EMD | *Prof. Lalan Kumar* | *Research Paper* 2021

- Implemented the research paper from scratch in Matlab, extracted various features of signal for classification
- Achieved an accuracy of 60%, trained 10-fold cross-validation Linear Regression Machine Learning model in WEKA

Dynamic Memory Allocator | *Prof. Rahul Garg* | *Course Project* 2020
Source Code

- Developed an efficient JAVA based system to allocate/free memory as per requirement using linked lists and trees
- Implemented Doubly Linked List data structure using First Split Fit algorithm to track free and allocated memory
- Implemented Best Split Fit algorithm to optimally perform allocate and free operations while minimizing fragmentation

Graph Topology Analysis | *Prof. Rahul Garg* | *Course Project* 2020

- Source Code
- Implemented bi-directed graph using two csv files having data regarding storylines of characters in Marvel comics.
- Implemented DFS on the graph to generate independent storylines by utilizing Hash-Map and Array-List data structures

Technical Skills

Languages: C++/C, Python, Java, HTML/CSS, Matlab

Softwares, Libraries, Tools, and Frameworks: OpenCV (Intermediate), Git/GitHub, VS Code, TensorFlow (Beginner), MATLAB, Octave, Microsoft Office

Performance Optimization Technologies: Multithreading, Heterogenous computing