Ashish Bhaskar

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Education

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

Work Experience

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

- Took ownership of key tasks related to low-light video solution development (A55), including QC model porting, development of interface for S24 Ultra Qualcomm, and collaboration with the solutions and HAL teams
- Led end-to-end design, development, and implementation of backend solutions, ensuring seamless integration and deployment pipelines, Contributed towards ideation and A1 documentation preparation for patent filing
- Optimized low-light video enhancement for low and mid-tier phones, leveraging heterogeneous computing (GPU & CPU task offloading) and multithreading, resulting in significant performance improvements
- Collaborated with cross-functional teams to architect scalable solutions, optimize backend performance, achieving 9X reduction in frame processing time, streamlined the deployment pipeline for cutting-edge camera systems
- Created custom APIs using Android NDK tailored to various architectures, seamlessly integrating them into the camera pipeline to enhance video processing capabilities

Internships

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 with comprehensive technical descriptions

Performance Modeling of Integrated Architecture | *SNU, South Korea* May 2021 - July 2021

- Conducted performance profiling of Intel integrated CPU-GPU architecture using custom-designed OpenCL microkernels, and meticulously documented Register Allocation for Intel Processor Graphics
- Dumped and Disassembled OpenCL kernels of Intel Architecture to generate the corresponding Assembly code

COASTER PROJECT | *Economics Department, Trinity College Dublin* March 2021 - May 2021

- Digitized and analyzed historical coastal trade data to assess Britain-Ireland macroeconomic trade relations
- Performed detailed data analysis to estimate trade volumes and trends during their economic union

Projects

Dynamic Memory Allocator | *Prof. Rahul Garg (IIT-D)*

- 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 memory fragmentation

Red Lesion Segmentation for Early DR Screening | *Prof. Monika Agarwal*

- Developed a solution for early-stage Diabetic Retinopathy screening by detecting red lesions in 2D retinal fundus images
- Utilized machine learning and image processing techniques, incorporating handcrafted intensity-based features to minimize false negatives and improve model accuracy

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

- 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 Expertise

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

Software, Libraries, Tools, and Frameworks: Arm Neon, OpenCL, OpenCV, Git/GitHub, VS Code, Visual Studio, MATLAB, Octave, Microsoft Office

Performance Optimization Technologies: Multithreading, Heterogenous computing