ASHWANI RATHEE

+91 7529050494 ashwanirathee.work@gmail.com

ashwanirathee.com github.com/ashwanirathee linkedin.com/ashwanirathee

Education

Panjab University(UIET) **2019 - 2023**

Bachelor of Engineering in Information Technology(CGPA of 8.70/10 with Hons.) Chandigarh, India

Experience

FleetSafe India **Jan 2023 - Present**

Software Engineer, *Previously Intern* | *C/C++, Python, Java* Mohali, India

- Developing a tailored 10-inch display Android Kiosk solution to serve a variety of mobile/web applications for mines.
- Designed and implemented firmware for a state-of-the-art 3D Radar Surveillance system while extensively exploring networking, multi-threading, geo-calculations, edge computing principles and simulators for rigorous testing.
- Developed Weighbridge Management Software from the ground up using Qt and C++, effectively integrating and managing various peripheral devices, such as cameras, weigh machines, boom barriers, and RFID equipment.

DIC MDaRT UIET **June 2021 - July 2022**

Team Lead | *Python, PyTorch* Chandigarh, India

- Led a team of 15+ students to conduct deep learning research focusing on brain and kidney tumors, and published 5+ research papers in reputable journals as a team while learning about leadership, coordination and perseverance.
- Conducted the Summer Training programs for AI group where over 200 students enrolled during 2021, 2022.

Projects

Semi-Automatic Brain Tumor Segmentation | *CAD Medical Imaging, PyTorch, Flask, NodeJS, GCP* Github

- Developed an annotator tool for Brain Tumor analysis utilizing deep learning (PyTorch UNET) and Plotly-Dash, enabling radiologists to create and refine initial masks, effectively reducing errors and repetitive tasks.
- Deployed four essential components i.e. DL inference model deployed on GCP, REST API-enabled Flask segmentation server, NodeJs-Express server for vectorization, and Dash application for post-model manual annotation refinements.
- Won Best Medical Hack at MHacks'21 organized by University of Michigan [Link]

MultipleViewGeometry.jl | *Stereo-Vision, Image Processing, Julia* Github

- Implemented Grid Detection Algorithms for checkerboard detection, utilized the checkerboard for camera calibration procedure for further analysis of stereo data.
- Supports Euclidean and Projective Geometry by providing various highly efficient operations in these spaces which are often used in stereo vision workflow.

Publications (Orcid)

- (Published) M. Juneja, **A. Rathee**, R. Verma, R. Bhutani, S. Baghel, S. Saini, P. Jindal, *Denoising of magnetic resonance images of brain tumor using BT-Autonet* in Elsevier Biomedical Signal Processing and Control Journal
- Upcoming Publications:
  - A. Kumar, M. Juneja, **A. Rathee**, G. Chutani, D. Chhabra, *An Edge and Tumor Aware GAN for Cross-Modality MR Brain Image Synthesis*
  - D. Chhabra, A. Kumar, **A. Rathee**, R. Verma, G. Chutani, M. Juneja, *An improved GAN architecture for kidney semantic segmentation using abdominal CT images*
  - M. Juneja, G. Chutani, **A. Rathee**, C. Chanana, G. Chhatwal, A. Kumar, R. Verma, H. Kaur, P. Jindal, *Fused Brain Tumor Classification integrating Deep Learning and Handcrafted Features for Enhanced Diagnostic Precision*

ExtraCurriculars and Achievements

- Helped conduct 3hr **"Image Processing with Images.jl"** Workshop at MIT during **JuliaCon'23**. [Link]
- **Google Summer of Code'22** developer for JuliaLang: Improved Image Meta-Data and GIF file format support. [Link]
- **ISCAS China's Open Source Promotion Plan'21** developer for JuliaCN: Improved documentation of JuliaImages. [Link]
- **Programming Club UIET Co-Convener** 2022-2023, hosted HackUIET, PSOC, SFD(Software Freedom Day).
- **GirlScript Summer of Code'21 Mentor** for AlgoScriptML project and top contributor in **PClub Summer Of Code'20.**
- **Silver Medal** in Research Competition on Kaggle - Trends NeuroImaging Competition.

Technical Skills

Programming Languages: Python, C/C++, Julia, Java, Kotlin, JavaScript, SQL
Frameworks and Databases: PyTorch, Django, Qt, ReactJS/NodeJS, PostgresSQL, MySQL