Madhusudan Patil

+91 7498640945 | madhusudanpatil457@gmail.com | linkedin.com/in/madhusudan-patil-14bab4206/ | gitlab.com/RA457/

Personal Info

Engineer with specialization in high-performance compute technologies, specializing in GPU-accelerated computing using CUDA and Vulkan. Experienced in machine learning applications, particularly in the medical field, and proficient in graphics development. Strong background in aerospace defense technology and simulation-based solutions, with a keen interest in the inner workings of microprocessor architectures and operating systems.

Education

Savitribai Phule Pune University — Pune, Maharashtra
Bachelor of Engineering in IT ***(Aggregate: 9.10)*** — *Oct. 2020 – July 2023*

MSBTE's RSM Polytechnic — Nashik, Maharashtra
Diploma in IT ***(Aggregate: 92.63)*** — *Aug. 2017 – Oct. 2020*

Experience

Software Engineer — Nov 2023 – Present
LaunchTrax — *Bangalore, Karnataka*

- Worked on simulation machines for Army Helicopters and their detailed graphics and micro-level physics.
- Worked on Mission Planning and Debriefing Software for Tejas MK1A fighter jet.
- Worked on Software Defined Radio Software for fighter jets.
- Worked on various missile and bomb simulations.
- Working on machine learning-based solutions for decision-making from live surveillance.

Software Engineer — Sep. 2021 – Sep. 2022
Triamp Motors — *Nashik, Maharashtra*

- Worked as a software engineer on their smart display for Electrical vehicles as well as worked on electronic integrations with sensors and the vehicle.

Projects

Localization and classification of fractures in the cervical spinal cord | *Pytorch, Python*

- Worked on a research project that performs the localization and classification of fractures in the top eight vertebrae in the spinal cord. This is done with a three-model structure involving vertebrae detection, fractured vertebrae classification, and localization of the fracture.
- (Selected for Grant Evaluation by Science and Engineering Research Board SERB)

Lane centering and object detection for self-driving | *Pytorch, Python, C++*

- Worked on a project that performs two aspects of a self-driving system involving lane centering and object detection. This is done with two models working together, with a Neural Network model controlling the steering wheel angle and torque and the other doing object detection for cars, pedestrians, etc.

Driving Monitoring Application | *Pytorch, Java, OpenCV*

- This project helps with driver monitoring. It uses the smartphone's front camera to detect eyes and faces and make judgments for lack of attention.

Lain Operating System | *x86 Assembly, C*

- This is an extremely small "OS" I have started working on to learn how an Operating System works under the hood. This contains various little components of an operating system.

Technical Skills

Languages: C/C++, Python, Java, C#, JavaScript, PHP, x86 Assembly

Frameworks & Libraries: Pytorch, TensorFlow, OSG, VSG, SIMDIS, Django, Flask, Spring Boot, .NET, Qt, GTK+, PyQt, PyGame, JavaFX, Node.js, Express.js, React.js, Laravel, Xamarin, Android

APIs: Vulkan, CUDA, OpenMP, MPI, Intel MKL, OpenGL

Technologies: Unreal, Unity

Languages Known

English: Proficient **Marathi:** Native **Hindi:** Proficient **Dutch:** Learning **Kannada:** Learning