PRANAV NATEKAR

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EDUCATION

Master of Science, Electrical Engineering *August 2022 - Present*
Rochester Institute of Technology, NY
Focus area: Signal and Image Processing

Bachelor of Engineering, Electronics and Communications Engineering *Aug 2015 - May 2019*
Savitribai Phule Pune University *CGPA: 7.00/10.00*
Coursework: Digital Signal processing, Digital Image Processing, Machine Learning, Advanced Microprocessors

COMPETENCIES

Programming	C, C++, Python, MATLAB
Frameworks	TensorFlow, PyTorch, Caffe
Familiar with	Device Drivers, Bare metal programming, Linux BSP, pre/post-silicon SoC software validation
Tools	Vim, Git, LaTeX, Doxygen

WORK EXPERIENCE

Embedded Software Engineer **SiFive** *June 2021 - July 2022*

- Developed a real-time host application for SiFive-U74 core in an SoC IP for a object detection pipeline with an AI accelerator.
- Built a multi-threaded application for camera capture and display with USB camera and MIPI display as an IO.
- Optimised existing firmware for the custom DSP to pre and post-process images for model inferences and make inferences 20% faster.
- Developed a Linux device driver for a multi-channel, multi-resolution ADC IP.

Intern **SiFive** *Dec 2020 - May 2021*

- Deployed object detection and image classification models like YoloV4, YoloV4-tiny and InceptionV3, ResNets, respectively, onto the SoC to make inferences in real-time!

PERSONAL PROJECTS

Automatic Detection and Classification of Tabla Taalas from Indian Classical Music
First winner of Google's TensorFlow Community Spotlight program

- Developed a system that would be able to first detect a tabla taala from a song and then classify the taala.
- Deployed models like CNN and LSTM with an accuracy of 85%, on a self-made dataset.
- Designed a GUI to record a mix, separate and then classify the taala in real-time!

Autonomous Vehicle Drive

- Designed a vehicle from scratch and driven autonomously using a neural network.
- Alongside autonomous driving, the car would identify STOP signs and traffic signals using Haar cascades.

Image Augmenter

- Designed a GUI in PyQT5 for image augmentation leading to 1000+ images, when a single image is fed.

AWARDS

Year	Event name, Position	Fest name, College
2018	Witrified, 1st	MindSpark'18, College of Engineering, Pune
2018	MicroApps, 3rd	MindSpark'18, College of Engineering, Pune
2018	Impedance, 2nd	Solutions'18, Army Institute of Technology, Pune
2018	Circuit Eye, 2nd	Melange'18, Vishwakarma Institute of Technology, Pune
2017	Circuit Fixer 2, 3rd	MindSpark'17, College of Engineering, Pune