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Navneet Anand Sah

Education

2016–2020 **B.Tech(ECE)**, *IIITD*, New Delhi,
Bachelor in Technology in Electronics & communication Engineering.

2014–2016 **Senior Secondary Examination**, *Kalka Public School*, New Delhi, .
Non-medical

Experience

Professional

June'20–Present **Sofftware Developer, Simulations**, *The Solar Labs*, Delhi.
- Work on backend development using Flask and Django.
- Collaborated with product team for planning to deploying complete features.
- Developed GPU based acceleration for faster calculations.
- Deployed CI/CD pipelines using Azure DevOps.
- Restructured code for increasing performance.

Jan'20–May'20 **Sofftware Developer Intern**, *The Solar Labs*, Delhi.
- Worked on modelling solar generation using PV panels.
- Added features to the existing product.
- Deployed REST APIs for added functionalities.
- Created functional and technical application documents

July'19–Dec'19 **Product Design Intern**, *Ampviv Healthcare Pvt. Ltd.*, Delhi.
- Worked on product design for medical imaging applications.
- Used computer vision techniques for segmentation and classification problems.
- Worked on embedded systems technologies like BLE, Wifi-Direct, digital signal and image processing along with designing and fabricating 3D printed prototype for various iterations of the product.

Miscellaneous

Co-Founder, *Knowtek*.
A Community of hardware and software enthusiasts to work on technologies from Open source hardware like Arduino, Raspberry Pi, Beaglebone to new python libraries. It is focussed group of tech enthusiasts building drones to employing AI and Machine Learning for Data analytics

Event Organized.
- Workshops on IOT.
- PitchCafe'19 Hackathon
- TinkerHack'18 Hackathon
- Jugadathon'17 Hackathon

Publication

Neha Jain, **Navneet Anand Sah**, Vivek Ashok Bohara and Anubha Gupta, "Experimental Results for Energy Harvesting by exploiting inherent inadequacies of Sampling process for IoT application" accepted in IEEE International Conference on Communications (ICC), Workshop, 2020.

Projects

Title *Hardware accelerators for Neural Networks*

Supervisor Dr. Sumit Mediratta

Description Using the OpenCL framework, we built a VGG16 CNN(Convolutional Neural Network) for object recognition and RNN(Recurrent Neural Network) for decryption of encoded message to run on heterogeneous environments such as CPUs, GPUs, and FPGAs. OpenCL provides hardware acceleration similar to CUDA, but it can be deployed on non-Nvidia GPUs, making it widely used for edge and fog computing.

Title *Human and Weapon Detection using CCTV cameras*

Supervisor Prof. Mahesh Babu A K

Description We used Yolov3, which is a state-of-the-art real-time object detection system. It predicts boxes at 3 different scales and is more efficient than ResNet-101 or ResNet-152. We then used tflite to compress model and deployed it on a Raspberry Pi that was attached to a camera. It collects inferences in real time and is capable of generating occupancy reports and create instant alerts in case of any weapons are detected.

Title *Image Blending using Homography Detection*

Supervisor Dr. A.V. Subramanyam

Description We created a project to blend two images into a single image based on the similarity of background. Using computer vision and homography detection techniques, contrast and position of the two images based on their contextual information was matched. We then used that information to blend the two images into a single image.

Title *Drones based data telemetry using Wi-Fi-based IoT nodes with Human Detection using CNN*

Supervisor Dr. Abhijit Mishra

Description A camera attached to the drone captures images at fixed intervals, which are then processed using the Convolutional Neural Network (CNN). The CNN model was trained to detect any objects in an image. In our case, we focused on human detection. The Processed data is stored locally on a drone-mounted Raspberry Pi, which is interfaced with a telemetry Radio. Whenever two drones come in a range of transmission, they exchange all their images. When a drone comes in proximity with the base station, all images collected from different drones are transferred to the base station. The program on base station stitches the images to make a video feed, with bounding box on the humans detected.

Languages

Python	Intermediate	*Back-end development, Image Processing and Neural Networks*
MATLAB	Beginner	*Signal processing and data munging*
C++	Intermediate	*Embedded System*
JAVA	Intermediate	*Android Development*
JavaScript	Beginner	*Node JS*

Other skills

EDA & Simulation tools	LTSpice, LabView, MATLAB, PSpice, SystemC
Cloud Platforms	Amazon Web Services, Google Cloud Platform, Microsoft Azure
Microcontrollers	Nordic BLE Nano v2, Raspberry Pi, ODROID XU4, Beaglebone green, Arduino