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ACADEMIC DETAILS

Course	University	Batch	CGPA/%
Bachelors in Computer Science and Engineering	Thapar Institute of Engineering and Technology	2016-2020	8.59/10
Computer Vision Nanodegree	Udacity	September 2018	-
Intermediate/+2	CISCE	2015	94.25%

RESEARCH PAPER

- **Neural Network and IoT Based Solution to Crop Vandalism**: [Status-Published] Towards Extensible and Adaptable Methods in Computing Conference(TEAMC 18), New Delhi. Implementation of YOLO-algorithm combined with triggering system through arduino and GPS modules tested against factors of distance and light, aimed to reduce crop loss by atleast 50% with low maintenance cost compared to trivial fencing
- **Neural Network and ROS based Threat Detection and Patrolling Assistance** : [Status-Pending] International Conference on Machine Learning and Data Science, Hyderabad (India). Proposed unmanned threat patrolling and instant communication using Deep Learning, Computer Vision, ROS and IoT.

TECHNICAL SKILLS

- **Languages** (Java, Python, C++), **Embedded AI** (TensorRT, Microsoft ELL, Raspberry Pi-3, Arduino, Zigbee), **Machine Learning** (Deep Learning, CNN, RNN, LSTM's, SLAM, Tensorflow, Pytorch), **Computer Vision** (OpenCV, Attention Mechanisms, Convolutional Filters), **Blockchain**, **Web Development** (Django, HTML, CSS, JS, Bootstrap), **Data Structures and Algorithms** in Java.

MAJOR PROJECTS

- **Smart CCTV Surveillance** (Embedded AI)
  - Realtime efficient object detection and Pi, combined with asynchronous connection to a web ip, where use can see the live stream and tracking.
  - Deals in counter terrorism, where we trained the model is trained on a arms dataset from open image dataset v4.
  - Use of devicehive for asynchronous connection in python.
- **Real-Time Drowsiness Detection and Alert on Raspberry Pi** (Embedded AI)
  - Implemented as **Research Intern** at **Nvidia Labs**, Bennett University.
  - Objective: Detect Eye and Mouth(Facial Keypoint) activity with Raspi-3 to alert drowsiness during work and driving.
  - Implementation tested on YOLO implemented using ELL, Resnet-101,Custom-CNN and SVM-HOG.
- **Automatic Image Captioning**
  - Applied the combined concepts of Convolutional Neural Networks and Recurrent Neural Network for automatic generation of image captions.
  - CNN used for object classification and RNN used to generate captions. Implemented in Pytorch framework.
- **Object Tracking and Localisation**
  - Implementation of Kalman filter for vehicle tracking.
  - Implemented SLAM for tracking an object over time and mapping out its surrounding environment.
- **Web Development Intern - Sristi UNICEF**
  - Web portal for innovation submission and review with language and speech compatibility for Indian Languages. Also a GUI for HBN event updates and HBN Magazine publication update on website Used Django as a web platform.

AWARDS AND ACHIEVEMENT

- **Full Merit Scholarship**, Thapar Institute of Engineering and Technology (2016-till date).
- **BEST Startup IDEA** The Startup Expo 3, Punjab. Won a cash prize of INR35,000
- **BEST RESEARH PAPER** TEAMC 18 Conference, New Delhi.
- **FIRST PRIZE** OctaHacks Hackathon.
- **Joint Secretary** Microsoft Student Chapter, TIET.