ARJUN CHAUHAN

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EDUCATION

Manipal Institute of Technology, Manipal, India **Expected: June 2020**
Candidate for Bachelor of Electronics and Communication *with Distinction* **(CGPA 8.50/10)**
Relevant Courses: Computer Vision, Data Science, Python Programming, Motion and Geometry Based Methods in Computer Vision, Introduction to Avionics and Navigation Systems

PROFESSIONAL EXPERIENCE

Myelin Foundry, Bengaluru, India *Intern* **December 2019**

- Applied deep learning algorithms such as ESPCN and GANs to optimize bandwidth requirements for Over the Top (OTT) streaming services for Hotstar (a leading OTT provider in India)
- Aided implement and optimize image filters to improve visual quality of videos at the edge.

Karel Electronics, Ankara, Turkey *Intern – Research and Development Centre* **July 2019**

- Developed an ADAS System for cars to detect oncoming traffic and pedestrians using Haar Cascades and Multi-object tracker to improve road safety.
- Integrated rear-view camera displays with a buzzer to warn the driver about any threats on roads.
- Demonstrated this system to FIAT, Turkey at a meeting between Karel Electronics and FIAT.

Karel Electronics, Ankara, Turkey *Intern – Research and Development Centre* **July 2018**

- Constructed an ADAS surround view system on an embedded platform using OpenCV and v4l2 for drivers to get a surround view of the vehicle.
- Incorporated 4 cameras to work simultaneously with the next generation rear-view cameras (instead of mirrors) in cars using OpenCV, V4L2, Driver Programming and C.

ACADEMIC PROJECTS AND PAPERS

Coursera Show A Skill Challenge

- Developed an algorithm for detecting people in distress using a swarm of drones aimed at aiding rescue and relief operations during natural calamities. Implemented using Ardupilot, ROS, and Tensorflow.
- Analysed the simulation using a System-In-The-Loop (SITL) before final hardware implementation.
- Incorporated an algorithm to geocode images and relay it back to base station and developed an application interface to plot and show these images.
- Awarded the second position all over India in Technology category.

TATA Makerthon Challenge at IIT Bombay

- Developed a Drone modular unit to enforce primary control over the flight controller making it compulsory for the drone to return to base when commanded using ArduPilot, MAVLink and dronekit.
- Analysed the simulation using a System-In-The-Loop (SITL) before final hardware implementation.
- Incorporated an algorithm to monitor operating parameters of the drone and plan the path on detecting violation.
- Designed the master control website with the database of legal flight parameters as set by the government.
- Awarded the first position all over India at Techfest held at IIT Bombay.

TATA Innoverse Challenge

- Developed a prototype for TATA Motors to inspect engines without any invasive procedures using borescope, Arduino and Raspberry Pi.
- Implemented image processing and fault detection using deep learning for the prototype to reduce the amount of time required in completely dismantling and examining an engine from a few hours to 10 minutes. Attained an accuracy of 85%.
- Technologies used: Python, Keras, OpenCV and Arduino.
- Appreciated for the contribution at TATA's Annual Meet in the presence of technical giants in the industry.

TATA Solverhunt 2 Challenge

- Interfaced a feature in drones to gather relevant updated images of roofs and stitch images captured to aid repairs and cleaning of roofs.
- Developed an approach to plan route and capture images using drone and provide an Orthmosaic image using Ardupilot, SITL simulation, ROS and OpenCV.
- Awarded first position all over India as winners of the Solverhunt 2 Hackathon.

Analysis of Social News Popularity and Bank Marketing using ARSkNN

- Authored and published a paper in international journal - Advances in Intelligent Systems and Computing, Springers IC4S, Bangkok, October 2017, pp.13-22, ISBN No: 978-981-13-0341-8, Volume 759.

TECHNICAL SKILLS

- Languages and Programs: Python, C++, C, MATLAB, Simulink, LaTeX, OrCAD, Xilinx ISE, Tina, Arduino.
- Platforms: Raspberry Pi, Tinker Board, Arduino, Xilinx FPGA.
- Operating System: Ubuntu, Windows, Ubuntu Mate.

EXTRA CURRICULAR ACTIVITIES

- Won a national level swimming competition and currently leading the university team to many accolades, state and inter-collegiate meets as the Team Captain during the years 2016-19.
- Awarded many championships as a national level athlete. Participated in various events as a member of Athletics team of MIT and the University Cross Country team in 2016.
- Held position of a state level Marksman in 10m Air Rifle Category and qualified for Nationals in the year 2017.
- Performed at various competitions and local gigs in and around Manipal as a Drummer of the College Band during the years 2016-19.
- Conducted workshops and helped fellow students with technical expertise in over 20 projects as the Technical Head of IE-E&C in 2018.