Aniruddh Chandratre

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Education

- **SVKM's NMIMS MPSTME** Mumbai, India
  B.Tech (Electronics and Telecomm. Engineering); CGPA: 3.5/4.0 *Aug. 2016 - Jul. 2020*

Work Experience

- **Machine Learning Engineer (Intern) at AfterShoot.co**, Remote Aug. 2020 - Present
  - Development of a Deep Learning model for no-reference image quality assessment
  - Development of a Deep Learning model for predicting the probability of an image going viral on Social Media
  - Development of a Deep Learning model for face quality assessment, in terms of pose, eye status, emotion, sharpness, and exposure.
- **Fullstack Developer at Wardrobe Global Pvt. Ltd**, May 2019 - May 2020
  - Developed and deployed a deep learning model to identify a fashion product from a catalogue of over **1 million** products using a **single** image as search query. Tech-Stack: TensorFlow, OpenCV
  - Developed backend for a full fledged fashion social network using **Falcon** and deployed it on Google App Engine.
  - Developed Android & iOS app using **Flutter** for accessing the social network and the deep learning model.
  - One of the founding members of Wardrobe Global. Pvt. Ltd.
- **Web dev Intern at AASRA - Suicide Prevention NGO**, Remote Dec. 2018 - Jan. 2019
  - Redesigned and developed the website accessible at https://aasra.info with a team of 6.
- **VLSI Intern at Bhabha Atomic Research Centre**, Mumbai, India May 2018 - Jul. 2018
  - Designed a high speed 8-bit SAR ADC mixed signal model in VHDL, VerilogA using Cadence tools.
  - Performed model characterization by implementing DSP transforms using MATLAB.
- **JAVA Intern at Bhabha Atomic Research Centre**, Mumbai, India May 2017 - Jul. 2017
  - Developed a software communication package and GUI in **JavaFX** for FPGA based multi-channel analyser for providing visualization tools for Nuclear Spectroscopy (Web enabled DSP-MCA).
- **Firmware Intern at YU Televentures, Pvt. Ltd.**, Mumbai, India Dec. 2015 - Feb. 2016
  - Worked on custom Android firmware, YuOS, based on Android Open Source Project (AOSP) for distribution to YU devices - (YU YUREKA, YU YUPHORIA, YU YUTOPIA) as an official update.

Freelancing Experience

- **Impetusutra App at Impetus Wealth Management**, Mumbai, India May 2020 - Jul. 2020
  - Developed Android, iOS & Web application for Impetus Profiling, Impetus Insights and Impetus Arthashastra (Courses).
  - Developed web based admin panel for CRUD operations across all aspects of the application.
- **SmartSeva App at Dignity Foundation (NGO)**, Mumbai, India Feb. 2020 - Jun. 2020
  - Developed Android & iOS app using Flutter that can be easily accessed by senior citizens to perform day to day tasks.
  - Developed features such as pill reminder, SOS alerts and accessibility tools such as virtual magnifying glass, torch, etc.

Publications

1. Aniruddh Chandratre, Kunal Amin, Jahnavi Doneria, Vaishali Kulkarni, **Autonomous aerial surveying using unmanned aerial vehicles for reconnaissance**, in *The 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT), 2020.*

2. Aniruddh Chandratre, Anushri Arora. **Optical Character Recognition For Handwritten Forms With Dynamic Layout**. *IEEE International Conference, 2018 4th International Conference on Applied and Theoretical Computing and Communication Technology (iCATccT)*

3. Aniruddh Chandratre, Anushri Arora. **Autonomous Attendance Management System Using Facial Recognition**. *IEEE International Conference, 2018 International Conference on Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT)*

Technical Skills

Languages	C, C++, Python, Java, MATLAB, Dart, Kotlin, JavaScript
Databases & indexers	MySQL, MongoDB, PostgreSQL, ElasticSearch
Computer Vision	OpenCV, MATLAB
App development	Native Android, iOS (Flutter), React.js
Backend Development	Express.js, Flask, Falcon, Django, Chalice
Containerization Technologies	Docker, Kubernetes

Awards & Achievements

- **First place at Smart India Hackathon 2020 - Hardware**, College Level
  - Developed a quad-copter for autonomous delivery of medical supplies in hilly region. Payload capacity was set at 2kg.
- **Out of the box idea at Smart India Hackathon 2020 - Software**, College Level
  - Developed a platform for continuous monitoring of city-wide road monitoring with the help of dash cam video streams.
- **First place (nationally) at Smart India Hackathon 2019**, IIT Roorkee
  - Developed a platform for **autonomous invoice processing** within non-stop 36 hours. The platform is layout invariant and can extract crucial billing information from any invoice using Image Processing and Deep Learning. Prime Minister of India Initiative.
- **First place (nationally) at Mastek's Deepblue Challenge Season 4, 2019**, Mumbai
  - The challenge here was to develop a platform to monitor city road conditions. Developed a commercially deliverable application and web portal that could estimate cost of repairs (based on **3D reconstruction of pothole using Structure from Motion (SfM) methods.**), GPS location, severity and status of repairs.
- **First place (nationally) at Mastek's Deepblue Challenge Season 3, 2018**, Mumbai
  - The challenge here was to developed a commercially deliverable platform to **automate the data entry process for hand-written forms**. M/s Mastek has integrated the package into their core services.
- **First place (nationally) at Newton Bhabha Foundation Technology Challenge 2018**, Mumbai
  - The prize was awarded for implementing **accurate (99.2%) autonomous attendance** system using face recognition.
- **First place (nationally) at IET Hack N' Code hackathon**, Mumbai
  - The prize was awarded for developing a deploy able platform for NGO (AASRA) to **assist suicide prevention.** The implementation leverages natural language processing to provide support, to classify the severity of the situation, and to assign priority for better situation management and assistance.
- **Best usage of MATLAB for Robotics (nationally) at ABU Robocon 2017**, Pune

- The prize was awarded for developing an image processing based algorithm for computing the angle required to throw a disc (90 grams in weight) on a platform at a variable distance (5m, 7m and 9m) along with implementation of line following using image processing in Simulink.

- **Best Presentation (intra-college level) at U'lectro 2018**, Mumbai
  - The prize was awarded for demonstrating a **miniature electric self driving car** in the inter-college project competition.
- **First runner up (nationally) at YU Developer Challenge 6.0**, Mumbai
  - **Custom Android Firmware**: Compiled and adopted the Android Open Source Project, Marshmallow for YU YUPHORIA.

Projects

- **Autonomous aerial surveying and 3D reconstruction (More Info)**, Mumbai, India 2020
  - Built an autonomous quad-copter for image acquisition and developed an aerial mapping platform capable of generating geo-referenced orthophoto mosaics, digital elevation models and a 3D mesh of the surveyed area.
- **Tetrastack (for World Robot Olympiad)**, Ahmedabad, India 2018
  - Developed a robot that can score as many points as possible in a robot version of the Tetris® game called Tetrastack. The robot should be able locate, identify, and stack interlocking colored shapes called tetracubes within the Stacking Form – a rectangular upright box, using OpenCV and TensorFlow on Raspberry Pi.
- **6 Degree of Freedom Pick and Place Arm**, Mumbai, India 2018
  - Developed a 6 degree of freedom robotic arm that could detect an object in a given workspace, pick it up and place it in a designated tub kept aside. The concept of inverse kinematics and machine vision (using OpenCV & TensorFlow) was used for achieving this goal.
- **Miniature Self Driving Car (More Info)**, Mumbai, India 2018
  - The intent of this project was to develop a miniature self driving electric car using OpenCV & TensorFlow on a Raspberry Pi. The autopilot system leveraged CNNs for predicting the curvature of the path ahead.

- **Design of Multipurpose FIR Filter**, Mumbai, India 2018
  - Designed a generic FIR Filter filter where the filter coefficients, input data width, coefficient width is **completely configurable.**
- **Delego (More Info)**, Mumbai, India 2017, 2018, 2019
  - Delego is the next revolution in conference technology. It aims to digitise the old and inefficient ways of manual communication and listings during Model UN conferences. With features like digital chits, QR integration, and integrated merchandise shopping, it changes the way conferences have been organised and managed so far. Delego has been adopted by the Mumbai MUN in 2017, 2018 & 2019.
- **ACEMusic**, Mumbai, India 2014
  - ACEMusic Player was designed for providing a material design based music player as soon as material design was announced. ACEMusic completed nearly 300,000 user installs, I also developed an experimental version of this application called Lantern Music Player.
- **Rapid Draw**, Mumbai, India 2017
  - This is a simple Artificial Intelligence Experiment to verify if a mobile neural network can recognize human-made doodles.
- **NOVA**, Mumbai, India 2016
  - Nova is a personal home automation assistant capable of digital switches, music and some has some additional cognitive abilities such as OCR, presence detection, etc.
- **PixelROM & FlexOS**, Mumbai, India 2013-2016
  - FlexOS was an android based custom firmware which aimed to provide additional features, and a better performance, along with easy and fast updates to its users. FlexOS was based on Android 5.0, and later on Android 6.0.