**VEDANT SAHAI**

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**Educational Qualifications:**

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| **Sr. No.** | **Particulars** | **Name of the Institute** | **Year** | **%/CGPA** |
| 1 | I.C.S. E | Thakur International School | 2014-2015 | 93 |
| 2 | H.S.C | Nirmala College of Science & Commerce | 2016-2017 | 83 |
| 3 | BE (third year) | Fr. Conceicao Rodrigues College of Engineering | ongoing | 9.41(cgpa) |

**Academic Activities:**

* Technical Editor for Fr CRCE college magazine “Fragmag-2018.”
* Conducted a workshop on “Deep Learning” by Shaunk de for TE students at Fr CRCE in the year October-2018.
* Attended and Conducted multiple workshops on “Introduction to Arduino” for the FE students at Fr CRCE in the year September-2018.

**Achievements:**

* Runner up of “Techno Talks” competition held during technical fest ‘Crescendo’ in the year 2018 at Fr.CRCE, Mumbai.
* Team Leader and Winner of Smart India Hackathon 2019 software edition, conducted by MHRD, Gov. of India, at Chennai.
* Secured 5th position at India Singapore Hackathon 2019, conducted by MHRD, Govt. of India and Govt. of Singapore, at Chennai.
* Secured 4th position at AI Hackathon, conducted by Tata Motors and Symbiosis Institute of Technology, Pune.

**Conferences:**

* M. Mehra, Vedant Sahai, P. Chowdhury and E. Dsouza, "Home Security System using IOT and AWS Cloud Services," *2019 International Conference on Advances in Computing, Communication and Control (ICAC3)*, Mumbai, India, 2019, pp. 1-6, DOI: 10.1109/ICAC347590.2019.9089839.

**Technical Skills:**

* Programming knowledge in C, Python, JAVA, JavaScript, HTML5, CSS, Bootstrap.
* Good knowledge of Machine Learning, Deep Learning, NLP, Blockchain and fair knowledge of Computer Vision.
* Can work efficiently in WINDOWS and LINUX.
* Deployed projects using DevOps tools such as Docker.

**Training & Certification:**

* AWS Innovate Online Conference 2019 on Machine Learning and AI and AWS Online Summit 2020 attendee.
* “Machine Learning and AI using Python” training conducted by ATS Learning Solution in association with Microsoft.
* Udemy courses on
* “Graph Theory Algorithm” by William Fiest
* “Automate the Boring Stuff with Python” by AI Sweigart
* “Blockchain A-Z™: Learn How To Build Your First Blockchain” & “Machine Learning A-Z: Hands-on Python & R In Data Science” by [Kirill Eremenko](https://www.udemy.com/course/machinelearning/#instructor-1), [Hadelin de Ponteves](https://www.udemy.com/course/machinelearning/#instructor-2), [SuperDataScience Team](https://www.udemy.com/course/machinelearning/#instructor-3), [SuperDataScience Support](https://www.udemy.com/course/machinelearning/#instructor-4)
* “Build Responsive Real-World Websites with HTML5 and CSS3” by Jonas Schmedtmann
* CognitiveClass.ai course on
  + “Deep Learning Using TensorFlow” by IBM

##### Coursera courses on

##### “AI for Everyone” and “Deep Learning Specialization” by deeplearning.ai

##### “AWS Fundamentals: Going Cloud-Native”, “AWS Fundamentals: Migrating to the Cloud” and “AWS Fundamentals: Building Serverless Applications” by AWS

* JP Morgan Software Engineering Virtual Experience by InsideSherpa.
* Five days online Student Development Program “Grooming for Placements by Industry Experts” organized by the Computer Engineering department of Fr. Conceicao Rodrigues College of Engineering from 24th May-28th May 2020.

**Experience:**

* Two-month internship at Mumbai International Airport Limited (GVK) in the IT department as a software developer in collaboration with the Wipro team.
* Worked with team Mavericks UAS of Fr.CRCE, a technical team that works on the development of drones and other aerial vehicles for 1 year ( 2018-19).

**Projects:**

* COVID19 Face Mask Detection for College

(Face Mask Detection system built with OpenCV, Keras/TensorFlow using Deep Learning and Computer Vision concepts to detect face masks in static images as well as in real-time video streams. The model is accurate, and since we used the MobileNetV2 architecture, it’s also computationally efficient and thus making it easier to deploy the model to embedded systems (Raspberry Pi, Google Coral, etc). This system can, therefore, be used in real-time applications which require face-mask detection for safety purposes due to the outbreak of Covid-19. This project can be integrated with embedded systems for application in airports, railway stations, offices, schools, and public places to ensure that public safety guidelines are followed.)

* Classification of skin diseases using Convolution Neural

(The project is based on a systematic approach to learning Neural Network-based algorithms based on which we tried to explore the field of Data Science. The project involved the classification of skin diseases based on images clicked by the user. The project also tries to explain various algorithms involved in Data Science and Neural Networks. The project is intended to help the common masses who can save time using our diagnosis mechanism than spending countless hours waiting for their profiling to be done and their reports to be assessed.)

* K-Yantra, an IIT Mumbai initiative

(K-Yantra project develops know-how for setting up an automated agriculture project – a testbed for addressing the real-world problem and hands-on learning for students on the application of what they learnt in theory through a fun and productive exercise. This entails first generating the soil through a recycling waste and resource recovery of the garden and kitchen waste which is in sync with the municipal solid waste management agenda of both central and state government. Plan and execute the creation of beds for growing plants. Making the little gadgets, tools, networking for maintaining and monitoring the growth of plants.)

* Leveraging Conversational AI for Secure Healthcare Assistance

(There is a rapid increase in the generation of medical data especially in a situation of medical emergency or crisis. When hospitals are understaffed to maintain healthcare data, they are prone to be tampered with. Users do not receive their medical information on time and cannot approach other institutions quickly with their medical history. Solution: Bring EHR to blockchain BigchainDB is a decentralized database that has immutability just like traditional blockchains. We have attempted to develop an end to end system for successful storage, transfer and tracking of patient healthcare data. All records are encrypted using AES-256 encryption and the access for this data is transferred through blockchain and asymmetric cryptography. Due to limited blockchain data storage, files are being stored in IPFS. A basic chatbot is also designed to avoid entering data manually into forms. Conversational history is tracked and stored on the blockchain too to maintain the credibility of the chatbot performance.)

* Presenting Obstacles Around an Airport Aerodrome Using Google Earth Pro and HereMaps API on a web-based App

{SMART INDIA HACKATHON 2019}

(The sole purpose of this system is to promulgate supplementary guidance materials to aerodrome operators and development authorities to keep control of obstacles being built around an airport. The AIP documentation aims to guide what is acceptable to the Aerodrome and Air Navigation Services Regulation (AAR) with regards to the rule and regulations of the Ministry of Civil Aviation, Government of India. The Annex 14 document recommends and explains the process of obstacle control, which is marking and lighting of obstacles, conducting of obstacle surveys, removal or lowering of obstacles and reporting of obstacles to the appropriate authorities. By using our system fully, the aerodrome operator should be able to establish an effective obstacle control process and keep his aerodrome and its vicinity safe for aircraft operations.)

* Context Classification from audio conversations

{SYMBIOSIS AI HACKATHON 2019}

(This project was undertaken as a part of SYMBIOSIS AI HACKATHON 2019 where I and my team had to convert a voice-based conversation between a customer and service center and find out the context of the conversation and classify it accordingly. Currently, call center agents to interact with customers and try to facilitate and fulfil customer needs. As part of the solution, you need to classify the customer conversations into different categories of calls linked with automotive industry (i.e., new vehicle purchase, inquiries, test drive request, break down assistance, roadside assistance etc.) for necessary action by the business.)

* Attentiveness and Attendance Detection Problem/Current Situation

{INDIA SINGAPORE HACKATHON 2019}

(Finalist at Singapore-India Hackathon (Top 5) with a cash prize of $2,000; Project Idea has given special mention by India PM Modi at the awards ceremony. Built an end-to-end architectural system that incorporates human pose estimator, emotion recognition and head gaze deep learning model into a customized neural network Intelligent Classrooms employees a suite of 3 computer vision models that enables a holistic understanding of a student Emotion Recognition Human Pose Estimation Gaze Detection. These outputs are harnessed as inputs into a customized neural network that generates a prediction of engagement levels of the student. The engagement level is then displayed in a classroom heatmap to show the dynamic changes in classroom engagement. Engagement levels are also plotted onto a dynamic chart to monitor the lesson across the lessons and help teachers to find the optimal time to call for breaks.)

* Medical Analytica

(A therapy based chatbot for emotion analysis and visualization. There is a wave of emotional instability among people who are on a downward spiral in life or are going through hard times. We have developed a chat companion to make the user feel better and to track analysis of user’s behavior.)

* Deepfakes with Keras-GANs

(Through this project, I learned to implement DCGAN or Deep Convolutional Generative Adversarial Network and trained the network to generate realistic-looking synthesized images. The term Deepfake is typically associated with synthetic data generated by Neural Networks which is similar to real-world, observed data - often with synthesized images, videos, or audio. Through this hands-on project, I went through the details of how such a network is structured, trained, and will ultimately generate synthetic images similar to hand-written digit 0 from the MNIST datasets. It needed me to have a theoretical understanding of Neural Networks, Convolution Neural Networks, and optimization algorithms like Gradient Descent. Focusing on the practical aspect of implementing and training DCGAN, but not too much on the theoretical aspect and with prior experience in Python programming.)

* Sentiment Analysis with Deep Learning using BERT & PyTorch

(In this project, I learned how to analyze datasets for sentiment analysis, how to read it in a PyTorch BERT model and adjust the architecture for multi-class classification. Learning how to adjust an optimizer and scheduler for ideal training and performance. In fine-tuning this model, I learned how to design & train and evaluate a loop to monitor model performance as it trains, including saving and loading models. Finally, I built a Sentiment Analysis model that leverages BERT's large-scale language knowledge.)

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