# VEDANT SAHAI

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**Summary**: Highly driven Computer Science Engineer seeking opportunities where I can expedite my knowledge of Artificial Intelligence especially in Natural Language Processing and Deep Learning

## EDUCATIONAL QUALIFICATIONS

**B.E Computer Engineering |** Fr. Conceicao Rodrigues College of Engineering     2017 - 2021
- Current standing CGPA – 9.58 (On a scale of 10)

**12th Grade |** Higher Secondary Certificate (HSC) - 82.33%     2017
**10th Grade |** Indian Certificate of Secondary Education (ICSE) - 92.33%     2015

## EXPERIENCE

**Co-Founder/Chief Technological Officer|** DataCertus Inc., New York, USA     June 2021 – Present
- Managing the AI tech-stack and developing backend ML/DL/NLP algorithms that are constantly curating analytical contexts where data science can help, such as disaster management or a global problem based on the latest datasets. Further, there are classic broad interest contexts, like digital circuit simulation models for engineers, Food Insecurity and Climate Change, which one can explore to find interesting datasets. Apart from conducting AI technical stack, I am also handling the marketing aspect of the product.

**Technical Consultant** | Emaar Farm Technik, Mumbai, India     January 2021 – Present
- Advising the company to incorporate various AI technologies in the domain of Hydroponic Farming and Fodder Machines to increase the efficiency and yield of the farming.
- Helping to develop an Android/iOS application for the various kinds of fodder machines available for valuable customers.

**Artificial Intelligence Research Intern |** Sync Energy Inc, New York, USA     July 2020 – Present
- Python-Flask based Power Outage API deployed on AWS cloud for extracting power outages statistics when state or county name or Lat/Long are given as inputs
- Developed python RASA based chatbots for the Power Outage API and GridLAB-D Secondary Network Builder (flexible, agent-based simulation engine that allows users to explore a wide variety of analyses or even constructing new scenarios during runtime) respectively
- Utilizing Deep Learning techniques to Identify Utility Poles with Crossarms and Estimate Their Locations from Google Street View Images

**Software Developer Intern** | Mumbai International Airport Ltd (CSMIA)     June 2019 – July 2019
- Integration of Airside Safety Management Application {AngularJS and Microsoft SQL Server database-based framework system} with Incident Monitoring System {Microsoft SQL Server database and .net based entity framework}
- Integration of Payment Module with the KIOSK
- Establishing a communication link between the ATS and the Flight Feed Server - Python script which was responsible for sending a SOAP request to the Flight Feed server and in response get the XML data and store it in a .txt file. The complete process was scheduled with Crontab and Shell Scripts

**Software Developer Intern** | Mavericks UAS, Fr. Conceicao Rodrigues College of Engineering
    June 2018 – June 2019
- Constructed and programmed autonomous hexacopter and quadcopter drones with obstacle detection & avoidance, self-navigation and payload handling capabilities

## TECHNICAL SKILLS

- Programming Skills in **C, JavaScript, Python, HTML5, CSS3, Tensorflow, Keras, NLTK, Spacy, OpenCV, Bootstrap, Scikit Learn, RASA, Flask** & **ReactJS**
- Cloud Experience in **AWS** & **Owncloud**
- Database Experience in **MySQL**, **PostgresSQL**, **MongoDB** & **Neo4J**
- Microservice Experience in **Docker**
- Practical Experience in **Git**, **REST APIs**, **IoT, Blockchain, Deep Learning, Natural Language Processing** & **Image Processing**
- Adept at **UAV systems & their construction** & **Bash Programming.**
- Research skills such as **technical writing, paper presentation** & **problem-solving**

## PROJECTS

**Medical Analytica using Blockchain**     April 2020 -May 2021
- A RASA based therapy chat-bot for emotion analysis, storing and tracking Medical Records, tracking user health and also track the analysis of the user's behaviour.

o   Used BigchainDB as a decentralized database to develop an end-to-end system for successful storage, transfer and tracking of patient healthcare data wherein records are encrypted using AES-256 encryption, stored in IPFS and the access for this data is transferred through blockchain and asymmetric cryptography.

**COVID19 Face Mask Detection and Facial Recognition**                                    May 2020 – Aug 2020

o   Built with OpenCV, Keras/TensorFlow using Deep Learning like FaceNet and DeepFace and Computer Vision concepts to detect face masks and recognize the faces in real-time.

o   Used the pre-trained model Keras-OpenFace which is an open-source Keras implementation of the OpenFace for the facial recognition part. Whereas mask detection uses the transfer learning approach using the MobileNetV2 architecture.

**Attentiveness and Attendance Detection Problem**                                    Aug 2019 - Dec 2019

o   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.

o   Outputs are harnessed as inputs into a customized neural network that generates a prediction of the engagement levels of the student which is then displayed in a classroom heatmap to show the dynamic changes in the classroom engagement, monitor the lesson across the lessons and help teachers to find the optimal time to call for breaks.

**Context Classification from Audio Conversations**                                    Jul 2019 - Oct 2019

o   The project is based on a systematic approach to convert a voice-based conversation between a customer and service centre and find out the context of the conversation and classify it accordingly.

o   Uses use Google's "Speech-to-text" to convert the voice clips to text and then uses it as an input for our OpenNMT NLP (Natural Language Processing) model which then carried out the intent classification task.

**Sentiment Analysis with Deep Learning using BERT & PyTorch**                                    May 2019 - Jun 2019

o   Project-based on a systematic approach to learning analyzing datasets for sentiment analysis, how to read it in a PyTorch BERT model and adjust the architecture for multi-class classification. Built a Sentiment Analysis model leveraging BERT's knowledge

**Web-App for Presenting Obstacles Around an Aerodrome Using Google Earth Pro & HereMaps API**
                                    Feb 2019 - Apr 2019

o   Flask-PostgreSQL based Web Application that can plot the obstacles in 2D and 3D objects on HereMaps (2D) and Google Earth Pro (3D) respectively, filter searches the obstacles depending on the parameters provided and automatic updates.

o   Records of all the obstacles located around an airport's aerodrome are maintained in the AD 2.10 section of the AIP documentation.

## PUBLICATIONS

- 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.

- S. Kaur, V. Sahai, A. Jaiswal and S. Chanda, "Knowledge Mining for Defining Systemic Engineering Practices," 2020 *4th International Conference on Electronics, Communication and Aerospace Technology (ICECA),* Coimbatore, 2020, pp. 1346-1352, DOI: 10.1109/ICECA49313.2020.9297380.

- Vedant S., Jason D., Mayank S., Mahendra M., Dhananjay K. (2021) Leveraging Deep Learning and IoT for Monitoring COVID19 Safety Guidelines Within College Campus. In: Garg D., Wong K., Sarangapani J., Gupta S.K. (eds) *Advanced Computing. IACC 2020. Communications in Computer and Information Science*, vol 1367. Springer, Singapore. https://doi.org/10.1007/978-981-16-0401-0_3

## ACHIEVEMENTS

- Secured **5th position** *at India Singapore Hackathon 2019*                                    Sept 2019
- Secured **4th position** at *AI Hackathon 2019*                                    Sept 2019
- Part of Team Mavericks who **won** the "**Joe Sportsmanship Award**" at *"Association for Unmanned Vehicles Systems International Student Unmanned Aerial System Competition 2019"*                                    June 2019
- **Winner** of *Smart India Hackathon 2019* software edition   March 2019
- **Runner-Up** in Techno Talks 2018 competition at *Fr. Conceicao Rodrigues College of Engineering, Mumbai* (District Level)                                    March 2018

## ACADEMIC ACTIVITIES

- **Active participation** in college level activities like **Dance**, **Intra-Tournaments** & **Social Services**                                    2017-2019
- Conducted a workshop on **"Introduction to Arduino"** with Team Mavericks UAS at Fr. Conceicao Rodrigues College of Engineering                                    Sept 2018
- Conducted Workshop on **"Deep Learning"** by Shaunk de with Team Mavericks UAS at Fr. Conceicao Rodrigues College of Engineering                                    Sept 2018
- **Technical Editor** at Fr. Conceicao Rodrigues College of Engineering college *magazine "Fragmag-2018"*                                    March 2018