VEDANT SAHAI

Gorai-2, Borivali-W | +91 9969863873 | vedantsahai18.github.io
Mumbai-400092, India | vedantsahai18@gmail.com | linkedin.com/in/vedantsahai18

Summary: Highly driven Computer Science undergraduate seeking opportunities where I can expedite my knowledge of Artificial Intelligence and Blockchain

EDUCATIONAL QUALIFICATIONS

B.E Computer Engineering | Fr. Conceicao Rodrigues College of Engineering **2017 - 2021**
- Current standing CGPA – 9.52 (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

Artificial Intelligence Research | Sync Energy Inc, New York, USA July 2020 – Present
- Python-Flask based API deployed on AWS cloud for extracting power outages statistics when state name or district name or Lat/Long are given as inputs
- Python RASA based chatbot for using the deployed power outage API
- Utilizing Deep Learning techniques to Identify Utility Poles with Crossarms and Estimate Their Locations from Google Street View Images
- Developed backend algorithms for Datacertus.com which constantly curate's contexts where data science can help, such as a disaster zone or a global problem based on the latest news. Further, there are classic broad interest contexts, like Food Insecurity and Climate Change, which one can explore to find interesting datasets. Contexts can also consist of digital circuit simulation models for engineers.

Software Developer | Mumbai International Airport Ltd (CSMIA) Jun 2019 – July 2019

Completed three projects in two months which are as follows:
- **I**ntegration 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 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 ills **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 April 2020 -Present

A RASA based therapy chat-bot for emotion analysis and tracking health. We have developed a chat companion to make the user feel better and to track the analysis of the user's behaviour. Furthermore, the chatbot can also track users context from previous chats, perform blockchain-related activities for storing and tracking Medical Records and act as a virtual assistant to patients in the absence/unavailability of the doctor. Using BigchainDB as a decentralized database 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.

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

Face Mask Detection system built with OpenCV, Keras/TensorFlow using Deep Learning and Computer Vision concepts to detect face and recognize the faces in real-time. The face recognizer application which can identify the face(s) of the person(s) showing on a webcam is inspired by two path-breaking papers on

facial recognition using deep convoluted neural network, namely FaceNet and DeepFace.I have used the pre-trained model Keras-OpenFace which is an open-source Keras implementation of the OpenFace (Originally Torch implemented).

Attentiveness and Attendance Detection Problem Aug 2019 - Dec 2019

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. These outputs are harnessed as inputs into a customized neural network that generates a prediction of the engagement levels of the student. The engagement level is then displayed in a classroom heatmap to show the dynamic changes in the 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.

Context Classification from audio conversations Jul 2019 - Oct 2019

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. It 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.

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

Records of all the obstacles such as the trees, buildings, hoardings, towers etc., located around an airport's aerodrome are maintained in the AD 2.10 section of the AIP documentation which is published on the Airport Authority of India's. Through this system, one can plot these obstacles in 2D and 3D objects on Google Earth Pro (3D) and HereMaps (2D).

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

TRAINING & CERTIFICATIONS

- **JP Morgan Software Engineering Virtual Experience** by *InsideSherpa* May 2020
- **AI for Everyone** & **Deep Learning Specialization** by *deeplearning.ai* April - May 2020
- **Machine Learning A-Z: Hands-on Python & R In Data Science** by *Udemy* April 2020
- **Understanding Deepfakes with Keras** by *Rhyme & Coursera* May 2020
- **Sentiment Analysis with Deep Learning using BERT** by *Rhyme & Coursera* May 2020
- **Blockchain A-Z™: Learn How to Build Your First Blockchain** by *Udemy* Jan 2020
- **Machine Learning and AI using Python** workshop conducted by *ATS Learning Solution* in association with *Microsoft* Aug 2019