Utkarsh Shukla

DATA SCIENCE ASSOCIATE

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Education

Vellore Institute of Technology, July 2015 - June 2019

Bachelor of Technology, Computer Science. CGPA : 8.43

Experience

ATLAN (PREVIOUSLY SOCIALCOPS), DATA SCIENCE ENGINEER — DECEMBER, 2018 - PRESENT

- Developed scalable models for prediction of Demographic, Economical and Human Settlement parameters of different geographies for providing business solutions. Parameters included affluence index , economic potential index, ambient population, traffic flow.
- Developed a graph based analysis model for mapping human settlement patterns and distribution of family clusters based on family type across Indian metro cities.
- Developed rural growth index based on identifying patterns in man made structures, Indian census data, government schemes employed in areas and year on year farming yields. Heavily involved in creating data cleaning and scraping pipelines on Airflow.
- Built data quality as a service using Spark to calculate statistical metric while providing an interface to implement custom metrics with support for data sources like Snowflake, Data Lakes on S3, Oracle. User can also setup custom checks on metrics, done to ensure trust in the data.
- Built ETL pipelines using Airflow and created a patch for Airflow 10.0.3 to get more granular metrics for generating dashboards and setting up alerts using Prometheus and Grafana.

BRAIN COMPUTER INTERFACE, RESEARCH INTERN

- Devised a machine learning model for prediction and classification of Scalp EEG scans into different states of the visual cortex Mentor: Mr. Andrea Isoni

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING, VIT UNIVERSITY, RESEARCH INTERN

- Created a pipeline for quantitive and qualitative analysis of intracranial EEG for prediction of onset of an Epileptic Seizure. Mentor: Prof. A Nayeemulla Khan

EURO EXIM BANK, DEEP LEARNING INTERN — FEBRUARY, 2018 - JUNE, 2018

- Created a Deep Learning Siamese neural net models which implements one shot learning for automated video and image KYC verification for the bank app.

Projects

EEG Simulator

- Developed a simulator for imitating brain waves of different cognitive states using reinforcement learning over standard Neural Mass Excitation Model with feature matching from the energy, frequency and time domains.

pyEEGpipeline (Library Still in Development)

- A pipeline which solves the problem of EEG artefact removal and feature extraction. Aimed to solve problems related to reading EEG from different sources, EEG cleaning and resampling, creating descriptive features using the domains of energy, frequency and time.

Code Rank, VIT University

- Platform for development, compilation and submission of codes for assessment. It serves as a substitute for a previously used paid service.

Automated Attendance System

- Developed a deep learning framework for a completely automated, facial recognition based attendance management system incorporating realtime auto enrolment and liveliness detection.

Publications and Talks

- *Epileptic Seizure Prediction Through Machine Learning and Spatio-Temporal Features Based Time Series Analysis of Intracranial Electroencephalogram Data*
- *A Deep Neural Network Framework for Road Side Analysis and Lane Detection*
- Getting Brain Waves to Python | PyData Delhi (Talk)
- A Dive into Brain Waves | GoogleDeveloperGroup DevFest Delhi 2019 (Talk)

Skills

- **Languages:** Python, Scala, Shell scripting, AngularJs
- **Big Data:** Spark, Tenserflow2.0, PyTorch, scikit-learn, Airflow, Flask, OpenCV, Selenium
- **Tools/Platform:** Kubernetes, AWS, Prometheus, Grafana, Docker

Entrepreneurship

- Developed an amalgamation of hardware and software for realtime epileptic seizure prediction. Collected a fund of 20,000 £ from Euro Exim Bank.