NILOY CHAKRABORTY in ⦿

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📍 Stuttgart, Germany

EDUCATION

Master of Science | **INFOTECH**   Oct. 2018 – Ongoing
University of Stuttgart   *Stuttgart, Germany*
Master Thesis: Error Detection in Unmanned Aerial Vehicle using Machine Learning and Deep Learning.

Bachelor of Technology | **Electronics and Communication Engineering**   Aug. 2012 – May 2016
Maulana Abul Kalam Azad University of Technology   *West Bengal, India*
Bachelor Thesis: Design of Digital FIR Filters using meta-heuristic Optimization Algorithms. ⦿

WORK EXPERIENCE

Working Student in Data Science   Oct 2020 – Ongoing
Koena tec GmbH   *Stuttgart, Germany*
- Data collection and building data **pre-processing pipeline**.
- Implemented Coffee Order detection Classification using **Random Forest, SVM** and predicting future consumption using **Composite LSTM Autoencoder**.
- Deployed the model in the cloud using **Docker**.

Intern in Predictive Analytics   Mar 2020 – Aug 2020
Robert Bosch GmbH   *Stuttgart, Germany*
- **Log data parsing** and **Process Mining** of the in-house Software (myMBR) to bring insights from data.
- **User Journey analysis** and Visualization using **Power BI** and finding the bottlenecks of the software.
- Development of Purchase Order Denial Model using **Random Forest Algorithm**.

Scientific Research Assistant   Feb 2019 – Dec 2019
Fraunhofer IAO   *Stuttgart, Germany*
- Collection and analysis of smart meter dataset.
- **Time-series stream clustering** using **Kmeans** and **Hierarchical Clustering** algorithms for finding correlation in the different subscription categories.
- Building Visualization dashboard for realtime streaming using **Flask** and **Plotly.js**.

Scientific Research Assistant   July 2019 – Dec 2019
IAAS-University of Stuttgart   *Stuttgart, Germany*
- Building data pipeline for smart data-center, including **data staging area**, **message queuing** using **Rabbit-MQ** .
- Developed **real-time data monitoring** dashboard using **Chronograf**.

System Engineer   Jul 2017 – Sep 2018
AI For Networks Lab, Tata Consultancy Services Limited   *Hyderabad ,India*
- Developed **IP Network Anomaly Detection** tool using **LSTM** and associated Web-API using **Python**, **Flask**, **HTML5**, **CSS**, and **JavaScript**.
- Implemented Deep Learning based **KPI prediction** using **Conv-GRU** algorithm.
- Implemented **Defect category classification** for defect tracking system using **Random Forest** Algorithm.

SKILLS

- **Language:** English (Fluent), German (Elementary)
- **Scripting/Programming Language:** Python, MATLAB, Java, JavaScript, C, VBA
- **ML Libraries/Frameworks:** Tensorflow, Keras, Pandas, Scikit-learn, Numpy, Scipy, Matplotlib
- **Databases:** MongoDB, MySql, SqLite
- **Web Technologies/Frameworks:** HTML5, CSS, JSON, Node.js, Flask
- **Automation:** Apache Airflow, Jenkins, Docker
- **Others:** Git, Agile, Confluence, PyCharm, Jupyter Notebook, Eclipse

PROJECTS AND RESEARCH ⚲

Human Attention Prediction for Webpages

Stuttgart, Germany

- A study of eye tracking attention dataset for websites using FiWi dataset (only 149 images).
- A 2 stage Transfer Learning process was used to to predict the human attention map using SVM and VGG 16 based Fully connected CNN with skip connections.
- The results were compared with the top saliency models like SALICON, Deep Gaze 2.

My Smart Home Garden

Stuttgart, Germany

- A Telegram bot was built to automate gardening system (Watering, Lighting, and Plant Identification)
- Cloud based data storage pipeline and dashboard for sensor and weather data was built.
- An AI planning model was developed for automatic watering and lighting.
- CNN based plant name and health identification models were developed.

Real Time Data Monitoring System

Stuttgart, Germany

- This project shows an end-to-end data flow pipeline via RabbitMQ and InfluxDB for sensor/ network KPI data.
- The data can be visualized via Chronograf in Real-Time for further analysis.

Time Series Stream Clustering for Smart Meter Data

Stuttgart, Germany

- Analysis and pre-processing of London Smart Meter sensor dataset.
- Time-series clustering of the using K-means, Hierarchical clustering, and Auto encoder.

Model Based Test Driven Development

Stuttgart, Germany

- An approach for developing faster Regression test suites and also in executing multiple test cases with less manual intervention.
- It uses Finite State Machines for visual representation of test cases.
- It also has features like tree visualization of the yang files, python code editor for writing test cases , syntax checker, graph editor etc.

PUBLICATIONS ⬈

IP Network Anomaly Detection using Machine Learning ⬈
IEEE Conference Paper (I2CT 2019)

Whale Optimization Algorithm: An Implementation to design low-pass FIR Filter ⬈
IEEE Conference Paper (iPACT 2018)

Design of IIR filter Using Gbest Guided Cuckoo Search Algorithm ⬈
IEEE Conference Paper (ICCECE 2016)

Design of Higher order FIR Low Pass Filter using Cuckoo Search Algorithm ⬈
IEEE Conference Paper (ICCSP 2016)

HONORS AND AWARDS

1. Recommended for **Student @ Bosch** program for Internship performance.
2. Best Performer of the Month, and Special Initiative award during my Full time job, for my contribution in the **R&D**.
3. Received Scholarship from **All India Council for Technical Education** for National Level technical training program.
4. Honoured with **VIDYASHREE** titled award for outstanding performance in the 10th Grade.