Arpan Majumdar

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SKILL SET

LANGUAGES
Proficient: Java, Python
Familiar: Scala, Kotlin

FRAMEWORKS
- Springboot and related libraries (Spring batch, Spring state machine, Spring kafka, Spring Security)
- Micronaut

TECHNOLOGIES
- Apache Spark (Big Data)
- Docker (Containerization)
- Drone (CI/CD)
- Kafka (Message broker)
- Redis (Caching)

TESTING
- JUnit4/5
- Mockito
- Powermockito

DATABASES
- Postgres
- Mongo
- Druid

OTHER SKILLS
- Image processing
- Machine learning
- Web development

EDUCATION

UNDERGRADUATE
NIT WARANGAL | AUG 2013 – JUNE 2017
B.TECH IN ELECTRICAL AND ELECTRONICS ENGINEERING
CGPA on a scale of 10 : **8.61**

HIGHER SECONDARY CBSE
SRI CHAITANYA TECHNO SCHOOL, VISHAKHAPATNAM, ANDHRA PRADESH | JUNE 2012 – MAY 2013
Percentage: **95**

WORK EXPERIENCE

TARGET CORPORATION | SOFTWARE ENGINEER
JULY 2017 - PRESENT | Bengaluru
Nearly 2.5 years of work experience in Retail Industry in the Merchandising and Search Teams in Target Corporation.

WORK PROJECTS

TARGET VENDOR INCOME | JULY 2017 - JUNE 2019
- Worked as a back-end developer for web app which helps Target collect Vendor Income by making contracts and deals with the contract negotiation process.
- The application uses a **React UI**, **SpringBoot backend** and **Postgres database**.
- It also feeds upstream and downstream consumers using **Kafka** messaging service.

SEARCH RELEVANCY ANALYTICS TEAM | JULY 2019 - PRESENT
- Worked in the search analytics team to gain insights from Target Search data and calculate metrics like **Click Through Rate (CTR)**, **Relevancy**, **Profitability**, **Null Rate** etc. Results of the analytics are used by various teams to improve their products and to catch anomalies.
- Designed **scalable data pipelines** for ingesting and progessing data with throughput of **3000 TPS(avg)/15000 TPS (peak)**.
- Used **Apache Spark** and **Kafka streams** for data analysis and **druid database** for storing and power dashboards from calculated metrics.

PERSONAL PROJECTS

MELT FRACTION CALCULATION OF PCM USING IMAGE PROCESSING | Feb 2017 – June 2018
- This was a research project aimed to **calculate melt fraction of a phase change material (PCM) using image processing** which was otherwise needed to be calculated using SolidWorks. This reduced the calculation time from **10-15 min/image** to less than **1sec/image**, thus improving the speed of research.
- Images of melting PCM were taken at regular intervals. **Image segmentation** and **3-D rotation** were performed to extract solid and liquid regions.
- A **genetic algorithm** was used for circle fitting and **K-Means** for image segmentation.

COMPUTATIONAL INTELLIGENCE LAB, AEROSPACE DEPARTMENT, INDIAN INSTITUTE OF SCIENCE, BANGALORE UNDER PROF. S. N. OMKAR | MAY 2016 - JULY 2016
- Aim of the project is to **perform mineral mapping of lunar hyperspectral data** obtained from **Moon Mineralogy Mapper(M3)** onboard **Chandrayaan-I**.
- **Fuzzy K-means** and **Expectation Maximization** clustering algorithms are used to cluster similar spectra and **Support Vector Machine(SVM)** was used for classification and comparison with lunar library spectra.

MOOCS

FLOORPLAN TO JSON PROJECT UNDER AAPKA PAINTER STARTUP | JAN 2016 - MAR 2016

- Aim of the project is to **convert floor plan given in image format to description of walls and their arrangement in JSON format** so that the JSON file can be used as input for **Aapka Painter 3d rendering software**.
- **Hough transform** for line detection and **Harris Corner Detection** algorithms are used to identify walls and corners respectively in the floor plan.

GAME AUTOMATION - ONE TOUCH DRAW | JAN 2016

- This project aims at **hacking the Android Game "One Touch Draw"**. The Connection to PC is either wireless or using USB and game is played on its own with ADB tools.
- One touch draw is a simple **Eular's path** graph problem in which player has to traverse the figure without lifting his/her finger.

ACHIEVEMENTS

- Paper titled **"An image processing algorithm to estimate the melt fraction and energy storage of a PCM enclosed in a spherical capsule"** is published in **International Journal of Energy Research. DOI: 10.1002/er.4668**
- Paper titled **"A spectral-spatial method for mineral mapping of M3 data using multiple classification approach"** is under review.
- Paper titled **Drawbot: A Mobile Robot for Image Scanning and Scaled Printing** published by **International Journal of Mechanical Engineering and Robotics Research.. 5. 10.18178/ijmerr.5.2.124-128.**
- Received merit scholarship in 1st year.