Sushovan Mandal, B. Tech student, Computer Science & Engineering, IIT Kharagpur

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Passionate **developer, ideator and technologist** with an eye for aesthetics. Eager to **learn and improve**. Would love to work on **Machine Learning** projects. Experienced in **C, C++, Python**, Web application framework **Django**. Cryptocurrency, Defence and Space Technology hobbyist. Fluent in English, Hindi, Bengali.

# Experience

### Alumnus Software Ltd., Kolkata – Engineer, Data Science Team

## APR 2018 – PRESENT

* Analysed and successfully projected how different promotion schemes would affect B2B sales of different biscuit brands and sub-brands to retailers and wholesalers, using Random Forest Regression on timeseries.
* Attained better predictions than existing methods, of Short Interest for US stocks, on given data after evaluating many Multi-Linear Regression, Random Forest, XGBoost regression machine learning models, finally selecting an ensemble of multi-linear regression models which was performing best overall.
* Achieved order of magnitude improvement in runtime over existing codebase, of machine learning modelling over full dataset, using optimized NumPy, pandas, python coding and parallelism.
* Improved reusability across projects by building a modular, optimized code flow framework for sliding window timeseries modelling using any machine learning technique.
* Optimizing stock loading efficiency for client using Azure Databricks as a platform to run models.

### Alumnus Software Ltd., Kolkata – Trainee Engineer

## OCT 2017 – APR 2018

* Designed and developed prototype chatbot Android app for a professional scenario with distress detection in a team of two; architecture consisted of Android app, Python Django Server and Google Dialogflow NLP agent.
  + Developed algorithm for stress incident detection using multiple inputs.
  + Trained a comprehensive Dialogflow bot with detailed custom user intents leveraging case-specific data.

### Microsoft India Development Centre, Hyderabad – Machine Learning Intern, Bing.com team

## MAY 2016 - JULY 2016

* **Automated Feature Engineering** for existing Debugging tool for location query results.
* Built **Big Data** tool **mining** past search logs to **Machine Learn** the most important locations.

### National Digital Library, IIT Kharagpur - Project Student, B. Tech Project

## FEBRUARY 2015 - NOVEMBER 2016

* **Engineered** upcoming sister web portal prototype, with active feedback from supervisor, for searching and accessing yesteryear Question Papers of Board Exams and Entrance Examinations, single-handedly.
  + Used **Django Frameworks** and **MariaDB** database backend and REST API.
* **Automated** metadata creation for indexing new educative content files in a Digital Library using **Python Information Retrieval** program making use of **Open-source** Python libraries like **lxml, ebooklib**.

### SAP Labs India, Bangalore - Intern

## MAY 2013 - JULY 2013

* Integrated Proprietary C# tool with 3rd party suite in **Testing Automation** in a 2-member team.
* Experimented on prototype Android application for testing mobile apps as a Proof of Concept.

### Autonomous Ground Vehicle Research Group, IIT Kharagpur - Junior Developer

## AUGUST 2011 - MARCH 2013

Team [AGV](https://www.linkedin.com/company/3863365?trk=prof-exp-company-name) is a **multidisciplinary research & development group** in the field of **Robotics & Artificial Intelligence** aimed at building a fully operational self-driving car.

* Acquainted with techniques like A\* search, Simultaneous Location and Mapping (SLAM), Reinforcement learning and Imitation Learning on 3D point cloud from LIDAR, stereoscopic vision.
* Contributed to SONAR and GPS sensor modules for **path planning and obstacle avoidance** using Kalman Filter for bot prototypes which won a few awards at IGVC '12 & ‘13, Michigan, USA, and also Autonomous Rover ​prototype chassis for ​Team Indus​, Google Lunar Xprize finalist.

### E-learning Portal [thelearningpoint.net](http://www.thelearningpoint.net/home/about), work from home - Freelancer

## JUNE 2012 - JULY 2012

* **Designed and developed** visual simulations of mechanics topics including Simple Harmonic Motion using Processing libraries and IDE, **proportional to real-time motion characteristics**, which are being used for e-learning purposes.

# Education

### Bachelor of Technology - Computer Science & Engineering, IIT Kharagpur

## Class of 2017, CGPA: ***7.0***

* Used **Hadoop Streaming** utility to extract and analyze **meaningful information** from large website and sales **logs**, with **Python mapper and reducer** scripts to run **Map-Reduce** on a Hadoop cluster.
* Used **C++ 11** for **Computer Graphics** and **C** for **Operating System** Projects.

### AISSCE 2010, CBSE 10+2 - DAV Model School, Durgapur

## All India Senior School Certificate Examination, Science with Computer Science: ***89%***

### AISSCE 2008, CBSE 10 – DAV Public School, Midnapore

## All India Senior School Examination: ***88.4%***

# Competition

### Robocop, Robotix ‘11 - Kshitij’11. Techno-Management fest of IIT Kharagpur

* Won **Best Freshers’ Award** with 3-member team in Robotics Event implementing **Image Processing.**
* Used **OpenCV** libraries in VC++ Project, run on a laptop driving Differential Drive of the bot.

# Skills and Expertise

**Python, C, C++ 11, Kotlin, Java, SQL**; **Linux** environment & **terminal**; Advanced version control: **git, Github**.

**Python** libraries: **NumPy, pandas, scikit-learn, Django** framework; Python **visualization**: **Matplotlib, seaborn, Plotly**.

Integrated Development Environments: **PyCharm, Android Studio**; Advanced code editors: **Atom, Sublime**.

# Extra-Curricular Activities

* Awarded one of the Best Volunteers in NSS as Deputy Group Leader
* Outdoor group activities like road trips, mountain trekking
* Sketching