

# SARANSH CHOPRA

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## EDUCATION

### Cluster Innovation Centre, University of Delhi

Freshman | B.Tech. Information Technology and Mathematical Innovations

New Delhi, India

2020 – Expected 2024

## EXPERIENCE

### Google Summer of Code

Remote

Open-Source Developer at PyBaMM, NumFOCUS

May 2021 – present

- Built an automated Twitter Bot to run Battery Degradation Simulations with random configurations (random parameter sets, models, experiments, degradation modes, parameter values etc.), from scratch
- Followed micro-services architecture to keep two major functionalities separate
- Hosted the tweeting functionality using a CI/CD pipeline built on GitHub Actions and the replying functionality on Heroku
- Used Pillow and Imageio to process images | Tweeted big files without using any wrapper library | Contributed to the PyBaMM repository

### MoneySeeds

Remote

2D Animator

August 2020 – September 2020

- Developed animated content using a Python based, Open-Source, Mathematical Engine library called Manim
- Used MikTeX for writing  $\text{\LaTeX}$  in the videos and FFmpeg for video processing

## PROJECTS

### MemeTastic: Winner of Elastic Hackathon [Flutter, NodeJS, Elasticsearch, Kibana, CI/CD, Google Cloud] May 2021

- A full stack Flutter application with a backend in NodeJS, developed to fetch memes from reddit.
- The backend runs every 30 minutes on a CI/CD pipeline developed using GitHub Actions to ingest latest meme data into Google Cloud hosted Elasticsearch.
- The Flutter frontend then pulls this data providing a feature to search any meme using the ngram analyser.

### PopItUp [Android, Kotlin, Firebase, Firestore, Google Sceneform SDK, Google ARCore SDK]

July 2021

- An Augmented Reality game developed in native android with Firebase and Firestore as the backend and the database.
- Externally injected Sceneform SDK into the app and used FirestoreRecyclerView to load live data into the leaderboard.

### ChaoticEncryption [Python, ODEs, Encryption-Decryption, Pseudo-Random Number Generator, Matplotlib] March 2021

- An Encryption-Decryption script that uses Logistic map and Lorenz System of Differential Equations as PRNGs.
- Along with encrypting images, it also aims to connect chaos, encryption and fractals together.

### MemeBoi [NodeJS, ExpressJS, Heroku]

May 2021

- A wrapper API for the Reddit API deployed on Heroku that can be used to fetch any number of images from any subreddit (started as a meme API but was updated to fetch any image) in an application.

## RELEVANT SKILLS

<b>Languages:</b>	Python   C/C++   Javascript   Java   Dart   Kotlin
<b>Frameworks:</b>	Flutter   ReactJS   ExpressJS   NodeJS   React-Native
<b>Platforms:</b>	Linux   Web   Windows   Heroku   Google Cloud
<b>Tools:</b>	Git   Elasticsearch   Kibana   Firestore   MongoDB   Firebase   Docker   CI/CD
<b>Other Skills:</b>	Content Writing   Public Speaking   Communication   Team-Work

## OPEN SOURCE EXPERIENCE

<b>PyBaMM:</b>	Contributed to PyBaMM   Organisation member   releases 0.4.0 and above
<b>Color-Science:</b>	Implemented the conversion between HCL and RGB colourspaces
<b>Open-Source Contributor:</b>	Mexili Winter of Code (1st / 250+)   Girlsript Summer of Code (98th / 6000+)   Cross Winter of Code (2nd / 250+)

## AWARDS AND ACHIEVEMENTS

<b>Hackathons:</b>	Elastic X Code for Cause hackathon winner (out of 2500+ registrations)
<b>Asteroid Discovery:</b>	Discovered an asteroid having a fixed orbit around Sun by analysing the data of Pan-STARRS
<b>Talks:</b>	Python in research   Git and GitHub etc. for the students of IIT Madras' online degree
<b>Scholarships:</b>	SUSE Cloud Native Foundation Scholarship   AWS Machine Learning Scholarship