

# Soham Chitnis

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## Summary

Currently a Pre-final year student at Birla Institute of Technology and Science, K.K Birla Goa Campus pursuing Computer Science. I am interested in Computer Vision and currently exploring it in Robotics. I am looking to collaborate on Open-source and Research Projects.

## Education

### BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE

Goa, India

B.E(HONS.) IN COMPUTER SCIENCE, MINOR IN DATA SCIENCE

Oct. 2020 -Present

- **CGPA** - 8.6/10
- **Relevant Completed Coursework:** Computer Programming, Linear Algebra, Probability and Statistics, Calculus, Object-Oriented Programming, Database Systems, Data Structures and Algorithms
- **Teaching Assistant:** Computer Programming

## Research Experience

### APPCAIR, BITS Pilani

Goa, India

UNDERGRADUATE RESEARCHER | [CODE](#)

Feb. 2022 - Present

- **Project:** Molecule Generation using Deep Graph Generators
- **Supervisor:** Dr. Tirtharaj Dash
- Generated Molecular data using **Graph Autoencoders** & **Variational Graph Autoencoders**.
- Experimented with Graph ConvNets

### Central Electronics Engineering Research Institute (CSIR-CEERI)

Chennai, India

RESEARCH INTERN | [CODE](#)

May. 2022 - July. 2022

- **Project:** Hyperspectral Imaging for Plastic Segregation
- **Supervisor:** Dr. Madan Kumar Lakshmanan, Dr. Amalin Prince A.
- Conducted **pre-processing** of data and **benchmarking** models.
- Built a **data augmentation** module for Hyperspectral Images.
- Trained models using **Self-supervised learning** method: SimCLR

## Projects

### Implementation of Super-Resolution ResNet(SRResNet) & Super-Resolution CNN(SRCNN)

March 2022

[CODE](#)

- Implemented **Super-Resolution CNN** & **Super-Resolution ResNet** with an upsampling factor of 2
- Conducted experiments and study on interpolation modes: **Bi-cubic**, **Bi-linear** and **Nearest Neighbour** and upsampling methods: **Sub-pixel** and **Transpose Convolutions**.

### Comparative Study of Reward functions on Policy gradient

August 2021

[CODE](#)

- Conducted a comparative study on different reward functions with **Policy gradient** algorithm to find minima of two variable quadratic function

### Bayesian Neural Network for Noisy XOR using Markov Chain Monte Carlo

March 2022

[CODE](#)

- Implemented Bayesian Neural Network using No-U-turn Sampler

## Project Kratos

August 2021-Present

### WEBSITE

- Developing Mars Rover for the University Rover Challenge (URC). At URC 2022, the team stood 1st in India, 2nd in Asia and 20th globally.
- Working on Rock analysis using Computer Vision. Building a End-to-end Deep Learning model for detecting presence of life in rocks.

## Adversarial Deep Learning

September - December 2021

### CODE

- Worked as Contributor to this Project. This project is a part of a book being written of same name where this project involves tutorials for the book.

## MLDataset.jl

March 2022

### CODE

- Worked as Contributor. Added PolBlogs Graph Datasets to Julia from Torch-geometric.

## Certifications & Summer Schools

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2022	<b>AI Summer School</b> , CVIT, IIT Hyderabad	<a href="#">Online</a>
2022	<b>Deep Learning Specialization</b> , DeepLearning.AI	<a href="#">Online</a>
2022	<b>CS231n-Convolutional Neural Networks for Visual Recognition</b> , Stanford	<a href="#">Online</a>
2022	<b>Building Transformer-Based Natural Language Processing Applications</b> , NVIDIA Deep Learning Institute	<a href="#">Online</a>
2021	<b>Machine Learning</b> , Coursera	<a href="#">Online</a>
2021	<b>Fundamentals of Deep learning</b> , NVIDIA Deep Learning Institute	<a href="#">Online</a>

## Skills

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- **Languages:** Python, C/C++, Java
- **Frameworks:** PyTorch, Tensorflow, Keras
- **Python Libraries:** Numpy, Scipy, OpenCV, PyTorch, Tensorflow, Keras, Matplotlib, Pandas, Scikit-Learn

## Honors & Awards

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2021	<b>Silver Prize</b> , CTE ML Hackathon	<a href="#">Goa, India</a>
2020	<b>100 percentile</b> , MHT-CET	<a href="#">Mumbai, India</a>
2017	<b>Silver Medal</b> , Dr. Homi Bhabha Balvaidnyanik Competition	<a href="#">Mumbai, India</a>

## Committees

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2022	<b>Member</b> , Society for Artificial Intelligence and Deep Learning	<a href="#">Goa, India</a>
2021	<b>Core Member</b> , Electronics and Robotics Club	<a href="#">Goa, India</a>
2021	<b>Core Member, Life Detection</b> , Project Kratos	<a href="#">Goa, India</a>