

Rishav MUKHERJI

Mumbai/India

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EDUCATION

BITS-Pilani, K.K. Birla Goa Campus

2020 - Ongoing

B.E. ELECTRONICS & COMMUNICATION

MINOR IN DATA SCIENCE

- Current CGPA - **9.29**
- Top 3% in the institute
- Recipient of 4 consecutive BITS Goa Merit Scholarships

EXPERIENCE

- **Serre Lab, Brown University** [Website](#) Sep 2022 - Ongoing
RESEARCH INTERN
Exploring and understanding generative modelling, particularly **diffusion models**, to work towards **few-shot / one-shot generation**.
Supervised by **Dr. Victor Boutin**
- **APPCAIR, BITS Goa** [Website](#) Aug 2022 - Ongoing
UNDERGRADUATE STUDENT RESEARCHER
Working on Explainable AI looking to predict Atrial fibrillation from ECG signals along with reasoning with the help of Neurosymbolic learning.
Supervised by **Dr. Lovekesh Vig** and **Dr. Ashwin Srinivasan**
- **CLSNet Lab, BITS Goa** [Website](#) Jan 2022 - Aug 2022
UNDERGRAD STUDENT RESEARCHER
Developing models for carrying out **Code Search** and **Duplicate Detection** in **Python, Java** and **C/C++** source code
Supervised by **Dr. Swati Agarwal**
- **CSIR - CEERI, Chennai** May 2022 - Jul 2022
RESEARCH INTERN
Working on **Image and Video Enhancement and Scaling** for Remote Photoplethysmography (**r-PPG**) for more accurate long distance inferences
Supervised by **Dr. Madan Kumar Lakshmanan** and **Dr Amalin Prince A.**
- **Wingify** Jun 2022 - Sep 2022
MACHINE LEARNING INTERN
Working on **Image to Image Translation** using **Generative Adversarial Networks** as well as **2D - 3D human pose manipulation** for health and lifestyle applications
Supervised by **Paras Chopra**

PROJECTS

- **Comparative study of Machine Learning techniques in Computer Vision** [GitHub](#) 2021
INDEPENDENT PROJECT
Built supervised (**ResNet**) , semi-supervised (**Vanilla CNN** with **pseudo labelling**) and unsupervised (**SimCLR**) models to carry out classification on STL-10 dataset and compared their functionality and effectiveness based on various parameters.
- **Natural Language Inference and Probing** [GitHub](#) 2021
INDEPENDENT PROJECT
Trained a **BiLSTM** Classifier on SNLI dataset to carry out inference and then analysed the model by carrying out probing based on **POS tags**
- **VFormer** [GitHub](#) 2021 - Ongoing

CLUB PROJECT, SAIDL

A **PyTorch** library that packages implementations of different kinds of **ViTs** and methods to visualize their attention maps, and provides an **easy-to-use API**.

- **Exploring Deep Learning models for Visual Saliency Prediction** [GitHub](#) 2022 - Ongoing
CLUB PROJECT, SAIDL
Implementing and bench-marking DeepGaze models. Exploring where these models fail and propose possible solutions.
- **Developing ML-DL models for IoT-based applications** 2022
SUPERVISED PROJECT
Setting up a LoRaWAN based IoT network for emergency messaging system and then using various ML-DL techniques to optimise the network and utilise it for wider purposes

COURSE WORK

ACADEMIC	Computer Programming Linear Algebra Calculus Probability & Statistics Meta Learning * Control Systems Applied Statistical Methods Foundations of Data Science Digital Signal Processing
ONLINE	University of Michigan: Python 3 Programming Specialization Stanford University: Machine Learning Udacity: Intro to Deep Learning with PyTorch NVIDIA: Fundamentals of Deep Learning DeepLearning.AI: NLP Specialization NVIDIA: Building Transformer-Based NLP Applications Stanford University: CS231n University of Toronto: Visual Perception for Self-Driving Cars University of Toronto: State Estimation and Localization for Self-Driving Cars

TEACHING EXPERIENCE

- **Introduction and Applications of Machine Learning** Nov 2021 - Jan 2022
INSTRUCTOR, CENTER FOR TECHNICAL EDUCATION, BITS GOA [WEBSITE](#)
- **Natural Language Processing** March 2022 - Jun 2022
MENTOR, CENTER FOR TECHNICAL EDUCATION, BITS GOA [WEBSITE](#)

SKILLS

PROGRAMMING LANGUAGES	Experienced: Python C++ C Familiar: Julia Java HTML CSS
FRAMEWORKS	PyTorch Keras Scikit-learn Tensorflow
LIBRARIES	Numpy Pandas OpenCV Matplotlib
TOOLS	GIT Arduino IDE
LANGUAGES	English Hindi Bengali

COMMITTEES

- **Society for Artificial Intelligence and Deep Learning** [General Secretary] [Website](#)
A non-profit, professional group of motivated individuals based out of BITS Pilani, working on research and application of Artificial Intelligence and Deep Learning.
- **Language Research Group** [Core Member] [Website](#)
Language Research Group (LRG) is a student-run Special Interest Group at BITS Pilani, Goa Campus. The group aims to study the theoretical and practical underpinnings of all things related to language, with a strong focus on inculcating the tools of research and experimentation in its methodologies to discover what lies underneath language.
- **Electronics and Robotics Club** [Member] [Website](#)
The Electronics and Robotics Club (ERC) of BITS Goa is a diverse group of students with interests ranging from electronics to machine learning to mechanical design.
- **SEDS Celestia** [Core Member]
SEDS Celestia is the Astronomy and Astrophysics club of BITS Pilani, K. K. Birla Goa Campus under the parent organization of SEDS India (which in turn is a chapter of the international SEDS organization)

- **IEEE BITS Pilani Goa Student Branch [Core Member]**

The IEEE student branch is a local chapter of the international IEEE organisation which functions with the aim to promote studies in various technological fields.