

RUPSA DHAR

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EDUCATION

Birla Institute of Technology and Science, Pilani

B.E.(Hons.) Computer Science, Minor in Data Science | GPA: 9.42/10.00

Hyderabad, India

Aug 2018 - Jun 2022

Indus Valley World School

Class XII Science, Central Board of Secondary Education | Score: 96.6%

Kolkata, India

Apr 2017 - Jun 2018

TECHNICAL SKILLS

Programming Languages

Python, C, C++, Java, JavaScript (React.js), HTML/CSS, SQL

Libraries and Frameworks

OpenCV, Tensorflow, PyTorch, Keras, Scikit-Image, MATLAB, CUDA

WORK EXPERIENCE

Apple Inc.

Hyderabad, India

Machine Learning Engineer

Jul 2022 - Present

- Worked in the Enterprise team in AppleCare, primarily specialising in Computer Vision with expertise in OCR technology, to develop high-value models to help with with Image processing and Key Information extraction on the Activation Lock portal where users upload thousands of proof of purchases per day. Model reduced manual intervention by 33%.
- Developed light weight models on UI using TensorflowJS to add quality checks for images uploaded increasing accuracy and efficiency by 32%.
- Developed Splunk and Tableau dashboards for metric and data visualisation.
- Implemented a PII detection model and explicit content detection model to help prevent unnecessary data to flow into system.
- Implemented a pipeline to validate and retrain model for templates for key attribute extraction helping improve time efficiency by 27%.
- Worked on a pipeline to implement advanced data extraction using OCR results and identifying important attributes by harnessing the power of LLMs.

Apple Inc.

Hyderabad, India

Machine Learning Intern

Jan 2022 - Jun 2022

- Worked with Apple Maps team to automate Street Sign Text Detection with CRAFT algorithm and novel image masking techniques. Helped improve time efficiency by 30% and with detection accuracy of 85%. Model was deployed to production and was modularized for re-usability across teams.

Salesforce

Hyderabad, India

Software Engineer Intern

May 2021 - Jul 2021

- Worked as a part of the BizTech team at Salesforce to automate Acceptance Criteria testing by performing Selenium tests and training an internal NLP model to achieve an accuracy of 74% and improving time efficiency by 27%.

Happiest Minds Technologies

Bangalore, India

Software Engineer Intern

May 2020 - Jul 2020

- Collaborated with the DBS group to develop reliable tracking of high value consignments during shipping to prevent losses incurred due to tampering by developing a MERN web application and AWS IoT device SDK.

PUBLICATIONS

1. Deepa Kumari, Vyshnavi S K, **Rupsa Dhar**, B.S.A.S. Rajita, Subhrakanta Panda, Jabez Christopher. *Smart GAN: A Smart Generative Adversarial Network for Limited Imbalanced Dataset*. The Journal of Supercomputing. Springer. [Under Review]

2. Sidharth Anand, Barsha Mitra, Soumyadeep Dey, Abhinav Rao, **Rupsa Dhar**, Jaideep Vaidya. *MALITE: Lightweight Malware Detection and Classification for Constrained Devices*. IEEE Transactions on Emerging Topics in Computing. [Under Review]

RESEARCH EXPERIENCE

Early Breast Cancer Detection using Imbalanced Dataset

BITS Pilani

Supervisor: *Dr.Subhrakanta Panda, Dept of Computer Science, BITS Pilani*

Aug 2021 - Dec 2021

- Implemented a Smart GAN pipeline for generating authentic and diverse images for primary datasets such the Mammographic Image Analysis Society (MIAS) using Q-learning on metric scores to choose the best GAN for a particular case. Resnet50 was used for binary classification in the final step after comparative analysis.
- Outperformed other existing approaches by giving a better accuracy of 89.62% on MIAS and 89.91% on DDSM augmented datasets. Observed an increment of approximately 10% detection rate compared to non-augmented datasets.

MALITE: Lightweight Malware Detection and Classification for Constrained Devices

BITS Pilani

Supervisor: *Dr.Barsha Mitra, Dept of Computer Science, BITS Pilani*

Aug 2021 - Dec 2021

- Worked to develop lightweight malware analysis system, that can classify various malware families and distinguish between benign and malicious binaries by converting a binary into a gray scale or an RGB image and employing low memory and battery power.

SELECTED PROJECTS

Alzheimer's Bot

BITS Pilani

Artificial Intelligence Course Project

Mar 2021 - Apr 2021

- Developed a Android Chatbot for Alzheimer's Patients in Java that uses AIML to reply to patient queries and helps them contact family and use Google Maps to guide them home. [\[Code\]](#)

Ratatouille

BITS Pilani

Software Engineering Course Project

Jan 2021 - Apr 2021

- Developed a full end to end platform using MERN stack for talented home cooks to monetize their skills by setting up local business and sharing recipes. [\[Code\]](#)

Poem Search Engine

BITS Pilani

Information Retrieval Course Project

Oct 2020 - Nov 2020

- Developed a Search engine in Python (and Flask for ui) for retrieving poems based on query search (using TF-IDF values) from a corpus of poems. [\[Code\]](#)

Online Cab Booking Portal

BITS Pilani

OOP course project

Oct 2019 - Dec 2019

- JAVA and MySQL used to create a platform to book cabs in real time. Nearest cabs were allotted to customers and a digital wallet was maintained. [\[Code\]](#)

ACHIEVEMENTS

Institute Merit Scholarship

BITS Pilani

Awarded for academic excellence in all the semesters (Top 1% in the School of Engineering).

Nov 2022

GHC Scholarship

AnitaB.org

Awarded to attend the 2021 Virtual Grace Hopper Celebration by AnitaB.org which is the world's largest gathering of women technologists.

Jul 2021

Micron Global Women's Mentorship Program

Micron Technology

Selected as a part of top 100 participants globally with hundreds of applications for a 6-week long mentorship under top women leaders at Micron

Apr 2021

EXTRA CURRICULAR ACTIVITIES

Member of the French Division in SAFL Club (Sanskrit and Foreign Languages), Member of the BITS MUN Club (Organising Committee), Creative-Writing, Debating, Pianist, Quizzer.