

# Partha Pratim Nandi



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## PROFILE

Masters in Data Science with experience in Python, data pipelines, and zero-shot vision models. Proficient on cloud-based prototypes and ETL pipelines, with a growing focus on GenAI/LLMs and practical AI applications.

## LANGUAGES

### English

C1

### German

B1

### Bengali

Native

## EDUCATION

### Master of Science in Data Science, Friedrich-Alexander-Universität Erlangen-Nürnberg ↗

October 2021 – January 2026 | Erlangen, Germany

**Thesis:** Exploring zero-shot computer vision models for the annotation and detection in the context of weed detection (collaborative thesis with the University of Hohenheim - submitted)

- Evaluated deep learning **zero-shot vision models** (CLIP, Grounding DINO, and Grounded-SAM 2) for classification, object detection, and segmentation in agricultural imagery.
- Performed statistical evaluation and comparative analysis to analyze model's performance and deployment feasibility.
- Ran large scale experiments on high performance computing (**HPC**) cluster, have experience with **SLURM** batch scripts to manage GPU resources, job arrays, and experiment scheduling.

**Courses:** Deep Learning, Machine Learning in Finance, Machine Learning in Signal Processing, Pattern Recognition, Machine Learning in Time Series

### Bachelor of Engineering in Computer Engineering, Gujarat Technological University ↗

August 2016 – August 2020 | Ahmedabad, India

Grade: 2.1

Recipient of a fully funded Government Scholarship (ICCR)

**Courses:** Software Engineering, Artificial Intelligence, Big Data Analysis, Object oriented Programming In JAVA, Web Technologies, Data Structure, Advance Design of Algorithms.

**Final Project:** Real-Time Bus Fare Comparison Android app

## WORK EXPERIENCE

### Fraunhofer IIS ↗, Research Assistant

May 2024 – present | Erlangen, Germany

- Developed UI for advanced interactivity of MPEG-H Next Generation Audio ↗
- Developed a responsive web interface for a cloud-based media encoding prototype using **React** and **TypeScript**.
- Collaborated with cross-functional teams to define requirement and integrate the frontend with backend encoding services using **GitLab**.

## TECHNICAL SKILLS

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### Programming

Python, SQL, BASH

### Deep Learning & Frameworks

PyTorch, TorchVision, Zero-Shot Learning, Foundation Models (CLIP, SAM 2, Grounding DINO), Transfer Learning

### Web Dev

React, Jest, Node.js, HTML 5, CSS 3, TypeScript, JavaScript, Wordpress

### Version Control

Git, GitLab

### Others

Problem solving, Communication, PowerBI

### Computer Vision

OpenCV, Object Detection, Instance Segmentation, Image Processing (Pillow)

## INTERESTS

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### Hobbies

Cricket, Piano, Fishing, Football, Video editing, Traveling

### Fraunhofer IIS, Research Assistant

September 2022 – January 2023 | Erlangen, Germany

- Developed automated data pipelines and quality assurance scripts using **Python** and **Shell**, which contributes in training and evaluation of AI-based audio noise reduction models.

### Purple Wave, Web Developer (Intern)

March 2020 – August 2020 | Dhaka, Bangladesh

- Built SEO-optimized e-commerce sites for local businesses.
- Tech: **Wordpress, JavaScript**

## PROJECTS

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### Analyzing the Impact of Weather on Traffic Collision Dynamics in Los Angeles ↗, Data Engineering Project (FAU)

October 2024 – February 2025

- Built and deployed an automated **ETL pipeline** to integrate traffic and weather data.
- Analyzed correlations to identify road safety risks and generated actionable insights for public safety .
- Technical Skills: Python, Git

### Image Classification using Resnet-50, Institute: FAU

- Implemented a ResNet-50 neural network for image classification and automated tagging