



# PRANJAL PARMAR

M.Sc. Computer Science Student | GenAI | Agentic AI | Computer Vision | NLP | RAG

@pranjalp@mscloud.uni-paderborn.de

+49-17643390704

Paderborn, Germany

linkedin

github

## EXPERIENCE

### Werkstudent

#### Metamorphosis GmbH (20h/week)

Feb 2024 – Present

Paderborn, Germany

- Fine-tuned Meta SAM2 for segmentation on medical imaging data to support automated segmentation and annotation workflows.
- Worked on medical image preprocessing pipelines to improve data quality and ML training efficiency for minimally invasive surgery.
- Annotated and validated high-precision medical imaging datasets for AI-assisted surgery.

### Business Analyst

#### Mapup Inc. — Reference Letter

Feb 2022 – Nov 2022

India

- Analyzed the problems in the transportation, OEMs, Automotive, First and Last-Mile industry
- Understood the needs of stakeholders and translated them into technical requirements for product development.
- Developed KPI dashboards providing realtime operational decisions.

## EDUCATION

### M.Sc. in Computer Science

#### Paderborn University

Apr 2023 – Present

Paderborn, Germany

- GPA: 2.3** | Focus: Data and Intelligence

#### Master's Thesis (Fraunhofer IEM, Heylexie.de) May '26 – Oct '26

- Title:** Design and Evaluation of a Neurosymbolic Child-Safe AI Architecture for Children Aged 4-7
- Research Objective:** Proposing a "Safety-by-Design" AI framework for children aged 4-7 through a novel hybrid neurosymbolic architecture.
- Implementation:** Integrating a Neural Semantic Parser with a Symbolic Safety Governor for deterministic, traceable, and explainable safety control.
- Evaluation:** Benchmarking against NVIDIA NeMo Guardrails using age-specific interaction datasets.

#### Master's Project: GenSys (Fraunhofer IEM, KI-Markplatz) Oct '23 – Aug '24

- Automated SysML 2.0 diagram generation, modification and explanation from natural language prompts and images using GPT-4 Vision.
- Developed a Streamlit interface to streamline system modeling.

### B.E. in Computer Engineering

#### Gujarat Technological University

2018 – 2022

India

- GPA: 1.3**

## OPEN SOURCE

### DataFog - PR #148

Contributed German-specific PII detection and locale-gated regex behavior to an open-source Python PII detection and redaction library, enabling opt-in support via `locales=["de"]`.

## PASSION PROJECTS

### VisionExpert-RAG

Built a visual RAG system using ColPali and Mistral-7B for technical document auditing.

### ACC-RAG Architecture

Developed an Adaptive Contextual-Retriever for local systems, fusing text with OCR diagram labels to extract all the details from engineering manuals.

### Multimodal Fracture Detection

Built an end-to-end fracture screening prototype that combined CNN-based X-ray detection with MedGemma explanations.

### Brain Tumor Detection with YOLO

Improved tumor localization in medical images by developing a YOLO-based detection pipeline.

## DOMAIN

Machine Learning

GenAI

NLP

Computer Vision

Neurosymbolic AI

## SKILLS

- Languages** Python, R, Java, SQL, LaTeX
- AI/ML:** PyTorch | LangChain | NeMo Guardrails | YOLO | CNN | RAG | SysML
- Tools:** Docker | Git | FastAPI | Streamlit | Power BI | OpenCV | Pandas | CI/CD

## LANGUAGES

English (Fluent)

German (A2 Level and Learning)

Hindi / Gujarati (Native)

## VOLUNTEERING

- Member, COLOURS EU Alliance
- Member, AIESEC
- Volunteer, ASV Paderborn