

# Tahira Shehzadi

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[github](#) | [linkedin](#)

## EDUCATION

### PhD in Computer Science

RPTU Kaiserslautern-Landau, Germany

Oct 2021 - Sep 2025

Kaiserslautern, Germany

### M.Sc. Computer Science

Pakistan Institute of Engineering and Applied Sciences, Pakistan

Nov 2018 - Sep 2020

Islamabad, Pakistan

### B.Sc. Electrical Engineering

University of Engineering and Technology, Pakistan

May 2014 - Sep 2018

Lahore, Pakistan

## WORK EXPERIENCE

### German Research Center for Artificial Intelligence (DFKI)

Oct 2021 - Dec 2025

Computer Vision Engineer

- Led research on semi-supervised object detection for challenging 2D environments under the BMBF project.
- Designed and deployed a vision-guided multimodal pipeline for document layout analysis under the LUMI-NOUS project, achieving approximately 98% precision.
- Developed computer vision-based medical anomaly detection systems under the AIRISE project, ensuring compliance with medical standards and minimum annotation and processing time by 70%.
- Supervised Master's students in research on semi-supervised, unsupervised, and multimodal learning.

### Tensorlake startup

Jan 2025 - Oct 2025

Applied AI Scientist

- Worked as an Applied AI Scientist focusing on document intelligence and computer vision research.
- Trained models for generating document layout data and implemented advanced post-processing pipelines to improve layout consistency and OCR accuracy.
- Developed a strikethrough detection pipeline involving data creation, model training, and automatic strikethrough removal prior to OCR, improving text recognition precision.
- Led VLM integration for document analysis, defining a JSON annotation schema and benchmarking Azure Document Intelligence, Amazon Textract, Google Gemini, and DotsOCR for accuracy, and latency.

## SKILLS

**Programming:** Python, C, CUDA

**Frameworks:** PyTorch, OpenCV, TensorFlow, Keras

**Emerging Topics:** Multi-Modality, LLMs, VLMs, Semi-Supervised Learning, RAG, Transformer Models

**DevOps:** Docker, Kubernetes, AWS, TensorRT, ONNX, Slurm, Cluster Computing, Hugging Face TGI

**Hardware/Sensors:** NVIDIA Jetson, Lambda Labs, wandb, Roboflow

## SELECTED PUBLICATIONS (GOOGLE SCHOLAR)

### STEP-DETR: Advancing DETR-based Semi-Supervised Object Detection with Super Teacher and Pseudo-Label Guided Text Queries

ICCV 2025

Tahira Shehzadi, Khurram Azeem Hashmi, Shalini Sarode, Didier Stricker, Muhammad Zeshan Afzal.

### Sparse Semi-DETR: Sparse Learnable Queries for Semi-Supervised Object Detection

CVPR 2024

Tahira Shehzadi, Khurram Azeem Hashmi, Didier Stricker, Muhammad Zeshan Afzal.

### A Hybrid Approach for Document Layout Analysis in Document Images

ICDAR 2024

Tahira Shehzadi, Didier Stricker, Muhammad Zeshan Afzal.

## AWARDS AND HONORS

NSF Travel Grant

WiML Workshop @ NeurIPS 2024

DAAD PhD Scholar

2021-2026

University Merit Scholarship

2018-2020

BISE Federal Matric and Intermediate Position Holder Award

District Level, 2010-2014

Two Academic Excellence Medals

Intermediate Studies

## LANGUAGES

English (B2)

German (A2)

Urdu (C2)

Punjabi (Native)