

## Education

- 2020–present **PhD in Computer Science**, *RPTU Kaiserslautern-Landau*, Germany.  
Thesis Title: Towards Spatial and Temporal Object Recognition in Diverse and Challenging Environments  
Advisor: Didier Stricker
- 2017–2020 : **Masters in Computer Science, Intelligent Systems**, *RPTU Kaiserslautern-Landau*, Germany.  
Thesis Title: DTNet: Deep Neural Networks for Table Detection and Structure Interpretation in Document Images  
Advisor: Didier Stricker

## Experience

### German Research Center for Artificial Intelligence, DFKI

- August 2020 – **Computer Vision Researcher**.  
Present
- Integrate large language models with open-world recognition frameworks for robust, real-time perception in unconstrained environments.
  - Research on real-time object recognition, segmentation, and tracking in videos under challenging conditions.
  - Develop a vision-guided navigation pipeline for assembly robots, integrating advanced perception and real-time path planning for accurate and efficient autonomous operations.
  - Build and deliver AI services to European industrial manufacturing SMEs, enabling defect detection and meeting safety standards with advanced computer vision algorithms.
  - Co-teach the Master's Deep Learning course at RPTU Kaiserslautern-Landau.
  - Mentor Master's students on theses, internships, and seminars in cutting-edge computer vision topics.
- December **Research Assistant**.  
2018 – April  
2020
- Developed concepts of Feedback Learning using Neural Machine Translation (NMT) to address post-Information Extraction (IE) errors in digital mailroom systems.
  - Built an efficient OCR pipeline for historical documents by integrating block segmentation with object detection and instance segmentation, significantly improving text extraction accuracy.
  - Collaborated with German Librarians to extract and analyze information from historical documents.

### Techlogix

- June 2016 – **Software Engineer**.  
August 2017
- Built integration services bridging core banking systems with business process applications.
  - Contributed to middleware for heterogeneous banking systems serving major banks in Pakistan and Saudi Arabia.
  - Developed predictive analytics solutions leveraging client data for better decision-making.
  - Utilized IBM Integration Service Bus, IBM Message Queue, Java, XML, ESQL, XPath, DB2, Teradata, SQL Server 2016, and Oracle 12C.

## Selected Publications

- 2025 **Khurram Azeem Hashmi**, Talha Uddin Sheikh, Didier Stricker, and Muhammad Zeshan Afzal. Beyond boxes: Mask-guided spatio-temporal feature aggregation for video object detection. In **WACV**, 2025.
- 2024 Tahira Shehzadi, **Khurram Azeem Hashmi**, Didier Stricker, and Muhammad Zeshan Afzal. Sparse semi-detr: Sparse learnable queries for semi-supervised object detection. In **CVPR**, 2024.
- 2023 **Khurram Azeem Hashmi**, Alain Pagani, Didier Stricker, and Muhammad Zeshan Afzal. Boxmask: Revisiting bounding box supervision for video object detection. In **WACV**, 2023.

- 2023 **Khurram Azeem Hashmi**, Goutham Kallemudi, Didier Stricker, and Muhammad Zeshan Afzal. Featenhancer: Enhancing hierarchical features for object detection and beyond under low-light vision. In **ICCV**, 2023.
- 2022 **Khurram Azeem Hashmi**, Didier Stricker, and Muhammad Zeshan Afzal. Spatio-temporal learnable proposals for end-to-end video object detection. In **BMVC**, 2022.

## Fellowships & Awards

- 2012 –2016 **Merit-based Scholarship** for the entire bachelors studies based on the achieved GPA.
- 2023 Nominated for an **AI New Commer Award** by the German Society of Computer Science.

## Academic Services

- \* **Reviewer** for major computer vision conferences, including **CVPR2025, ICLR2025, WACV2025, ECCV2024, CVPR2024, WACV2023, ECCV2022**
- \* **Reviewer** for Journals, including **IEEE TCSVT, IEEE Access, Neurocomputing**.

## Technical Competence

Programming	<b>Python, C++, C, Java, ESQl, PHP</b>
Frameworks	<b>PyTorch, OpenCV</b> , TensorFlow, Keras, Laravel, Spring
DevOps	<b>Docker, ONNX, ROS</b> , Slurm, Cluster Computing, Kubernetes, Linux
CI/CD	<b>GIT, SVN, GitLab</b>
Hardwares	<b>NVIDIA Jetson, Industrial Cameras (IDS)</b> , Monocular Cameras, Intel RealSense RGB-D Sensors

## Invited Talks

- \* Self-Supervised Learning in Computer Vision – Augmented Vision Workshop 2023
- \* Instance Representation learning in Low-light Environments – All Hands Meeting 2023