

Viet Pham

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Education

Technical University of Munich (TUM) , M.Sc. in Computer Science Focus: AI in Medicine, Computer Aided Medical Procedures, Computer Vision	Munich, Germany Oct 2023 – Aug 2026
Johns Hopkins University (JHU) , Master's Thesis in Computer Science Topic: Multi-Modal Imitation Learning for Robotic Partial Nephrectomy (Grade: 1.0)	Baltimore, USA Apr 2025 – Sep 2025
Karlsruhe Institute of Technology (KIT) , B.Sc. in Computer Science (Minor: EE) Thesis: Reinforcement Learning for Laparoscopic Tissue Retraction (Grade: 1.0)	Karlsruhe, Germany Oct 2017 – Sep 2023

Experience

Johns Hopkins University , Intelligent Medical Robotic Systems and Equipment Lab <i>Visiting Graduate Scholar</i>	Baltimore, USA Apr 2025 – Sep 2025
<ul style="list-style-type: none">Developing multimodal imitation learning models for robotic partial nephrectomy, fusing visual observations with BERT-encoded language instructions and pre-operative anatomical context for action predictionContributing multimodal surgical demonstration data (robot trajectories, synchronized camera streams) to the Open-H Embodiment dataset, a multi-institution open-source healthcare robotics initiative (NVIDIA, JHU, TUM)	
Carl Zeiss AG , Corporate Research Team Karlsruhe – Medical Robotics <i>Working Student – Research & Innovation</i>	Karlsruhe, Germany Oct 2023 – Mar 2025
<ul style="list-style-type: none">Self-initiated interdisciplinary research collaboration with the AI in Medicine (AIM) Lab at TUM on instrument localization in microscope-integrated OCT images; implemented methodology and conducted experiments underlying the Scientific Reports 2026 publicationExtended and maintained reinforcement learning pipelines in medical simulations (SOFA); integrated new features and conducted further experiments	
<i>Intern - Research & Innovation</i>	Jun 2023 – Sep 2023
<ul style="list-style-type: none">Designed and trained reinforcement learning agents for the capsulorhexis procedure in cataract surgery; implemented the SOFA-based RL training pipeline, designed the reward function, and conducted the experiments underlying the ICRA 2024 publicationConducted wet-lab experiments on a Mecaademic single-arm robot using ex-vivo porcine tissue and phantoms, including software and hardware integration for closed-loop agent evaluation	
Karlsruhe Institute of Technology , Health Robotics and Automation (HERA) Lab <i>Student Research Assistant</i>	Karlsruhe, Germany Jun 2022 – Mar 2023
<ul style="list-style-type: none">Performing semantic image segmentation on surgical images using deep learningPorting ETH Zurich's magnetic continuum robot (m-CR) SOFA simulation for RL	
apic.ai GmbH <i>Working Student – Software/Data Engineer</i>	Karlsruhe, Germany Jan 2020 – Mar 2022
<ul style="list-style-type: none">Developing ETL data pipelines for video data analysis using AI, processing over 35 TB/yrOptimizing Kubernetes cluster including up to 256 NVIDIA GPU instances (GKE, EKS)	
Publications	
Open-H Embodiment: The first healthcare robotics open dataset Open-H-Embodiment Consortium (Dataset Contributor) NVIDIA, Johns Hopkins University, Technical University of Munich	Apr 2026 doi:10.48550/arXiv.2604.21017
Domain-agnostic weakly supervised surgical instrument segmentation Rebekka Charlotte Peter, Doan Xuan Viet Pham, et al., Franziska Mathis-Ullrich <i>Scientific Reports (Nature Portfolio)</i>	Mar 2026 doi:10.1038/s41598-026-43054-1
Highly Accurate Real-time Surgical Scene Rendering using Gaussian Surfels Idris O. Sunmola, et al., Doan Xuan Viet Pham, Axel Krieger <i>IEEE/CVF Winter Conference on Applications of Computer Vision (WACV 2026)</i>	Nov 2025 doi:10.48550/arXiv.2503.04079
Lens Capsule Tearing in Cataract Surgery Using Reinforcement Learning RC Peter, S Peikert, L Haide, DXV Pham, et al., F Mathis-Ullrich <i>IEEE International Conference on Robotics and Automation (ICRA 2024)</i>	Aug 2024 doi:10.1109/ICRA57147.2024.10611714

Skills

Tooling: Python, C#, C++, ROS, PyTorch, OpenCV, NumPy, SOFA, Docker, Kubernetes

Technologies: Reinforcement & Imitation Learning, Medical Robotics, Vision-Language Models, Computer Vision

Languages: German (native), Vietnamese (native), English (fluent)

References

1. Axel Krieger, PhD

Associate Professor

Intelligent Medical Robotic Systems and Equipment Lab (IMERSE Lab)

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2. Dr. Zhongliang Jiang

Assistant Professor

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3. Prof. Dr. Franziska Mathis-Ullrich

Professor

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Department Artificial Intelligence in Biomedical Engineering (AIBE)

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4. Dr. Eleonora Tagliabue

Team Lead Medical Robotics & Assistance Systems

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5. Dr. Paul Maria Scheikl

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