Driton Salihu

Doctoral Candidate
Agnes-Bernauer-Straße 39, 80687 Munich, Germany
Technical University of Munich, Chair of Media Technology

📞 (+49) 015783647767
✉ driton.salihu@tum.de
🔗 LinkedIn Profile
G Google Scholar

SKILLS

Programming: Python, C/C++, Kubernetes, Docker, C# (Unity), Tensorflow, Pytorch
Machine Learning & Computer Vision : Scan-to-CAD, Implicit Representation, Latent Encoding, Transformers, Multimodal Learning, Reconstruction, Neural Rendering, Pose Estimation, Point Cloud Completion, Gaussian Splatting, Diffusion
Machine Learning: Tensorflow, Pytorch
Languages: German (Native), Albanian (Native), English (C1), Chinese (B1)

EXPERIENCE

•Researcher Doctoral Candidate
December 2021 - PRESENT

Technical University of Munich, Chair of Media Technology — Munich, Germany
- Working on latent encoding and representation learning (ICLR 2024, WACV 2023)
- Working on reconstructing 3D indoor environments (from images and point clouds)
- Working with 3D point cloud data (model-based and indoor-scale)
- Project work on 6G-life
- Teaching duties (Digital Signal Processing, Software Engineering Lab)
- Publications at ICLR, WACV, ICASSP, etc.

•Research Exchange at Sun-Yat-sen University
March 2023 - April 2023

Sun-Yat-sen University — Shenzhen, China
- Research exchange and collaborations
- Research exchange on face super-resolution & point cloud feature extraction
- Resulted in two joint publication

•Research Intern (Master Thesis)
May 2021 - October 2021

Nokia & Technical University of Munich — Online & Munich, Germany
- Illumination of Augmented Reality Content using a Digital Environment Twin
- Scanning of room environment and Point Cloud reconstruction (Creation of a Digital Twin)
- Developed a new method of using a Digital Twin for Illumination Estimation
- Developed new Illumination Estimation technique based on nonlinear Spherical Gaussian
- Developed Augmented Reality application in Unity for Android
- C++, OpenCV, PCL, Eigen, Python, Pytorch, C#, Unity, Android NDK

•Research Assistant
Oct. 2019 - March 2021

Technical University of Munich, Chair of Integrated Systems — Munich, Germany
- Optimizing Binarization of Convolutional Neural Networks using Metaheuristics. (SGA, NSGA2, SA)
- Hardware-Aware Automated Quantization using Reinforcement Learning. (DDPG, SGA, NSGA2)
- Student job assisting a group of PhD students in their research of optimizing CNN for Hardware
- Docker, Python and Tensorflow

•Research Intern in Autonomous Driving
Sep. 2020 - Jan. 2021

BMW Group — Munich, Germany
- Efficient CNN Architecture for 3D Object Detection. (CenterNet)
- Optimization of CNN through Neural Architecture Search (Quantization and Pruning).
- Developed a new in-train quantization method for CNNs improving performance significantly
- Kubernetes, Docker, Python and Tensorflow

•Working Student in Software Development
Aug. 2018 - Feb. 2019

Philotech GmbH — Munich, Germany
- Softwaredevelopment with C and Softwaretestdevelopment with Python.
- Testframework development in Python.
- Graphical User Interface development in C.

•Teamleader & Student & Intern
Aug. 2017 - Feb. 2019

eCARus Technical University of Munich — Munich, Germany
- Organization of the Team Drive and Test Bench.
- Development of new concepts.
- Weekly team meetings and regular meetings with the Professors.
- Development of an ethernet model (C).
- Support for spi communication between STM32F4 and an encoder angle sensor evaluation.

•Working Student in Purchasing Department
May 2016 - Aug. 2016

Magna BDW Technologies GmbH — Markt Schwaben, Germany
- Order/ Bills creating/editing.
- Database editing (SAP, Microsoft Excel).

EDUCATION

•**Doctoral Candidate in Electrical and Computer Engineering** *Dec. 2021 - PRESENT*
Technical University of Munich

•**Master of Science in Electrical and Computer Engineering** *Oct. 2019 - Oct. 2021*
Technical University of Munich

•**Bachelor of Science in Electrical and Computer Engineering** *Oct. 2016 - Sep. 2019*
Technical University of Munich

EXTRACURRICULAR ACTIVITY

•**Offenes Haus** *Sep. 2013 - Jun. 2015*
Core Member Markt Schwaben, Germany
   – Support for students with a migration background.
   – Helping students at homework (Math/German/English).

•**Tennis & Karate** *PRESENT*
Core Member Munich, Germany

EXTRACURRICULAR ACTIVITY

Driton Salihu, Adam Misik, Yuankai Wu, Constantin Patsch, Fabian Seguel and Eckehard Steinbach. DeepSPF: Spherical SO(3)-Equivariant Patches for Scan-to-CAD Estimation. The Twelfth International Conference on Learning Representations. 2024 (ICLR 2024).

Driton Salihu, Adam Misik, Yuankai Wu, Constantin Patsch, and Eckehard Steinbach. NPRF: Neural Painted Radiosity Fields for Neural Implicit Rendering and Surface Reconstruction. ICASSP 2024-2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). IEEE, 2024

Constantin Patsch, Jinghan Zhang, Yuankai Wu, Marsil Zakour, **Driton Salihu**, and Eckehard Steinbach. Long-Term Action Anticipation Based on Contextual Alignment. ICASSP 2024-2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). IEEE, 2024

Driton Salihu and Eckehard Steinbach. SGPCR: Spherical Gaussian Point Cloud Representation and its Application to Object Registration and Retrieval. 2023 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV)

Hongjun Wu, Haoran Qi, Huanrong Zhang, Zhi Jin, **Driton Salihu** and Jian-Fang Hu. Reconstruction with robustness: A semantic prior guided face super-resolution framework for multiple degradations. Image Vis. Comput. 140 (2023): 104857.

Adam Misik, **Driton Salihu**, Heike Brock and Eckehard Steinbach. COCCA: Point Cloud Completion through CAD Cross-Attention. IEEE International Conference on Image Processing (ICIP 2023)

Yuankai Wu, Xin Su, **Driton Salihu**, Hao Xin, Marsil Zakour and Constantin Patsch. Modeling Action Spatiotemporal Relationships using Graph-based Class-level Attention Network for Long-term Action Detection. 2022 IEEE International Symposium on Multimedia 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023)

Driton Salihu, Adam Misik, Markus Hofbauer and Eckehard Steinbach. S2CMAF: Multi-Method Assessment Fusion for Scan-to-CAD Methods. 2022 IEEE International Symposium on Multimedia (ISM)

Fasfous, Nael, Manoj Rohit Vemparala, Alexander Frickenstein, Emanuele Valpreda, **Salihu, Driton**, Julian Höfer, Anmol Singh, Naveen Shankar Nagaraja, Hans-Joerg Voegel, Nguyen Anh Vu Doan, Maurizio Martina, Jürgen Becker and Walter Stechele. AnaCoNGA: Analytical HW-CNN Co-Design Using Nested Genetic Algorithms. 2022 Design, Automation & Test in Europe Conference & Exhibition (DATE) (2022)

Vemparala, Manoj Rohit, Nael Fasfous, Lukas Frickenstein, Alexander Frickenstein, Anmol Singh, **Salihu, Driton**, Christian Unger, Naveen Shankar Nagaraja and Walter Stechele. Hardware-Aware Mixed-Precision Neural Networks using In-Train Quantization. British Machine Vision Conference (2021).

Fasfous, Nael, Manoj Rohit Vemparala, Alexander Frickenstein, Emanuele Valpreda, **Salihu, Driton**, Nguyen Anh Vu Doan, Christian Unger, Naveen Shankar Nagaraja, Maurizio Martina and Walter Stechele. HW-FlowQ: A Multi-Abstraction Level HW-CNN Co-design Quantization Methodology. ACM Transactions on Embedded Computing Systems (TECS)

EXTRACURRICULAR ACTIVITY

Acted as a reviewer for the International Journal of Computer Vision, The Thirteenth International Conference on Learning Representations (ICLR 2025), 2025 International Conference on 3D Vision (3DV), 2023 IEEE/CVF International Conference on Computer Vision (ICCV), 2023 IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2023 IEEE Global Communications Conference (GLOBECOM).