

Saqib Javed

CONTACT INFORMATION

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EDUCATION

EPFL, Switzerland

Doctoral Research, Computer Vision Lab (EPFL Global Leader)

Oct, 2021 - Present

- **Topic :** Energy-Efficient and Resource-Constrained Deep Networks
- **Supervisors :** [Prof. Dr. Pascal Fua](#) [Dr. Mathieu Salzmann](#)

ETH - Zürich, Switzerland

M.Sc. Electrical Engineering (Research abroad)

Sep, 2020 - Mar, 2021

- **Topic :** Hardware-Friendly Mixed-Precision Neural Networks
- **Supervisors :** [Prof. Dr. Luca Benini](#) [Prof. Dr.-Ing. Walter Stechele](#)

Technical University of Munich, Germany

M.Sc. Communications Engineering (Distinction - Ranked 3rd in class)

Oct, 2017 - Mar, 2021

- **Thesis :** Hardware-Friendly Mixed-Precision Neural Networks

CURRENT PROJECTS

“Efficient Diffusion Models”

in progress

“Vision-Language Models and Large Language Model compression”

in progress

PUBLICATIONS

“Temporally Compressed 3D Gaussian Splatting for Dynamic Scenes”

S. Javed, A. Jarrar, C. Dumery, C. Zhao, M. Salzmann.

“Self-Ensembling Gaussian Splatting for Few-Shot Novel View Synthesis”

C. Zhao, S. Javed, Xuan Wang, Tong Zhang, M. Salzmann.

“Quantization-Aware Training for Domain Generalization”

S. Javed, H. Le, M. Salzmann.

“Modular Quantization-Aware Training for 6D Object Pose Estimation. *TMLR, 2024*”

S. Javed, C. Li, A. Price, Y. Hu, M. Salzmann.

“Towards SWARM: A Smart Water Monitoring System. *ICPS, 2020*”

J. Kunze, V. Mayer, L. Thiergart, S. Javed, P. Scheppe, T. Tran, M. Haug, M. Avezum, B. Bruegge, Eugne C. Ezin.

PROFESSIONAL EXPERIENCE

Agile Robots AG | Applied Machine Learning, Germany

Working Student | Software Development

May - August, 2021

- Deployment of object detection models on Jetson Xavier AGX with tensorRT optimization.

Max Planck Institute | Extraterrestrial Physics, Germany

Research Intern | Deep learning on FPGA

April - August, 2020

- Enhancing framerate of camera by using chess mode of high speed image sensors and feeding the readed data stream into deep neural network for performing pixel interpolation on FPGA.
- Supervisors:** [Dr.-Ing. Markus Plattner](#) [Dr.-Ing. Sabine Ott](#)

BMW Group / TUM | Autonomous Driving Campus, Germany

Research Intern | HW/SW Optimization of CNNs

July - December, 2019

- Implemented an innovative method to optimize CNNs and reduce power and memory footprint of machine learning models.

Supervisors: [Prof. Dr.-Ing. Walter Stechele](#) [Dr. Nael Fafous](#)

GE-Healthcare, Germany

Intern | Software Test Engineering - Automation

March - June, 2019

- Software development and testing of GE-Healthcare’s product “Seno Iris” which is used for examining images from Mammography.

Siemens AG | CT RDA IOT SES-DE, Germany

Research Intern | Deep learning and Model Deployment

October - December, 2018

- Implementation of algorithms in the area of machine learning, image processing and distributed systems to automate laser welding process, configurable by Web APIs.
- Supported the implementation of demonstrator for collaborative embedded systems.

Intel | Application debugger., Germany

Working Student | Software Development

March - August, 2018

- Development and testing of tools for software developers to support application debugger functions on next-generation company hardware platforms using C and C++.

INTERNATIONAL
EXPERIENCE

Ferienakademie | Autonomous Drones for Sustainability, Italy

Summer School

September - October, 2019

- Did research under the supervision of Prof. Dr. Bernd Brügge to introduce a smart water monitoring system which is centered around unmanned aerial vehicles (UAVs).

TEACHING

EPFL | Teaching Assistant, Lausanne

Introduction to Machine Learning (4 Semesters)

Probability and Statistics and Responsible Software (1 Semester)

TUM | Chair of Electronic Design Automation, Germany

Tutorship | VHDL System Design Laboratory

November 2019 - July, 2020

- Guided students for two semesters to understand and solve lab tasks in implementing AES encryption algorithm on FPGA.

Supervisors: Dr.-Ing. M.Eng. Li Zhang

SKILLS &
COMPETENCIES

Languages: Python*, C/ C++*, VHDL, C#, Assembly

Libraries: OpenCV, Numpy*, Scipy, Matplotlib*, Pandas, scikit-learn

Software/Frameworks: PyTorch*, Keras*, Tensorflow*, Selenium, L^AT_EX*

Version Control: Git **IDEs:** PyCharm* * denotes higher proficiency

LANGUAGES

English, German(B1), Urdu, Hindi, Punjabi, French (A1)

ACADEMIC
PROJECTS
(SELECTED)

Reducing Carbon Emissions based on Policy Decisions post COVID-19 Apr - Sep, 2020

- Developed a tool for policy makers, scientists and other researchers to analyze different policies and their impact on the CO2 emissions.

Supervisors: Prof. Dr.-Ing. Klaus Diepold

Obstacle Detection and Avoidance for Visually Impaired September, 2016 - June, 2017

- Developed a complete prototype made for Visually impaired people to freely navigate in an indoor environment using sensor fusion technique.

Supervisors: Dr. Khawar Khurshid

Semantic Segmentation via Reduced FCNNs October, 2018 - January, 2019

- Casting classification networks (VGG16 & LeNet) into fully convolutional segmentation networks and retraining with 88.01% px-wise cross-val. accuracy & 0.81 IoU (pytorch & MSRC dataset).
- 75% model reduction (500 MB → 85 MB) via iterative filter pruning (based on l_1 norm) and retraining with 83.61% px-wise accuracy & 0.74 IoU.

Supervisors: Dr. Yiyu Shi

FPGA Implementation of IDEA Algorithm

April, 2018 - June, 2018

- Implementation of IDEA algorithm on the Spartan-3E FPGA using VHDL.

HONORS &
AWARDS

- *Recipient*, EPFL Global Leaders doctoral fellowship, 2021-2025.
- *Recipient*, International research stays scholarship for computer scientists (DAAD- IFI), 2020.
- *Top 50 candidates*, 9th National Chemistry Talent Contest(NCTC), Pakistan , 2012.
- *Recipient*, NUST Academic Merit Scholarship, 2013 - 2017.
- *Captain*, Table Tennis Team, Nust-SEECS, 2016 - 2017
- *Winner*, National Table Tennis Tournament, Fast-Islamabad, Pakistan, 2016 - 2017