Saqib Javed

CONTACT INFORMATION

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EDUCATION

Technical University of Munich (TUM), Germany   www.tum.de
M.Sc. Communications Engineering | CGPA: 1.4/1.0 (3rd in class)   October, 2017 - Present
transcript

National University of Sciences & Technology (NUST), Pakistan   www.nust.edu.pk
Bachelor of Electrical Engineering | CGPA: 3.59/4.00   September, 2013 - June, 2017
- **Thesis:** "Obstacle Detection and Avoidance for the Visually Impaired"   transcript

PROFESSIONAL EXPERIENCE

TUM | Chair of Integrated Systems, Germany   ei.tum.de/en/lis
Research Intern | Deep learning on FPGA   April,2020 - Present
- 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.

BMW / TUM | Autonomous Driving Campus, Germany   bmwgroup.com
Research Intern | HW/SW Optimization of Convolutional N-Networks   July - December, 2019
- Implemented an innovative method to optimize CNNs and reduce power and memory footprint of machine learning models.   (paper in progress)

GE-Healthcare, Germany   gehealthcare.com
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.

TUM | Chair of Electronic Design Automation, Germany   eda.ei.tum.de
Tutorship | VHDL System Design Laboratory   November - July, 2020
- Guided students for two semesters to understand and solve lab tasks in implementing AES encryption algorithm on FPGA.   VHDL Lab

Siemens AG | CT RDA IOT SES-DE, Germany   new.siemens.com
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   intel.com
Working Student | Softwar 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++.

PUBLICATIONS

J. Kunze, V. Mayer, L. Thiergart, **S. Javed**, P. Scheppe, T. Tran, M. Haug, M. Avezum, B. Bruegge, Eugne C. Ezin. "Towards SWARM: A Smart Water Monitoring System" *IEEE ICPS*, Finland, June 2020   SWARM

INTERNATIONAL EXPERIENCE

Ferienakademie | Autonomous Drones for Sustainability, Italy   ferienakademie.de
Summer School   September - October, 2019
- Worked under the supervision of Prof. Dr. Bernd Brgge to introduce a smart water monitoring system which is centered around unmanned aerial vehicles (UAVs).

SKILLS & COMPETENCIES	**Languages:** C/ C++*, Python*, VHDL, C#, Assembly
	Libraries: Keras*, Tensorflow*, PyTorch, OpenCV, Numpy*, Scipy, Matplotlib*, Pandas, scikit-learn
	Software/Frameworks: Flask, MATLAB/ Simulink*, Unix/ Bash, Docker, Selenium LaTeX*
	Version Control: Git **IDEs:** PyCharm* * *denotes higher proficiency*
LANGUAGES	English, German, Urdu

PROJECTS

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.
  Thesis Supervisors: <u>Dr. Khawar Khurshid</u> & <u>Dr. Ahmad Salman</u>   <u>repository</u>

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 $\rightarrow$ 85 MB) via iterative filter pruning (based on l_1 norm) and retraining with 83.61% px-wise accuracy & 0.74 IoU.   <u>repository</u>

Securing MQTT Protocol using AES-GCM   February, 2018 - July, 2018
- Implemented AES-GCM encryption algorithm to secure MQTT Protocol Communication between Broker and Subscriber.   <u>repository</u>

FPGA Implementation of IDEA Algorithm   April, 2018 - June, 2018
- Implementation of IDEA algorithm on the Spartan-3E FPGA using VHDL.

Smart Parking Lot   September, 2016 - January, 2017
- Developed a prototype for Smart Parking Lot using AT89C51 Microcontroller.   <u>repository</u>

Huffman encoder   September, 2014 - January, 2015
- Implemented Huffman encoding algorithm using C++ for Data Structures and Algorithm course project to compress text files.   <u>repository</u>

Snake Game   February, 2014 - June, 2014
- Developed a Snake game in Object Oriented Programming course using C++ in Microsoft Visual Studio IDE. (Best project in the class)   <u>repository</u>

VOLUNTEER EXPERIENCE & COMMUNITY SERVICE

NUST-Student Government Association (SGA), NUST-SEECS   <u>facebook.com/SEECS.SGA</u>
Head of Events, Sports Society   September, 2015 - September, 2016
- Supervised team of 10 people to manage the events for each sports during the whole year.

ACM Mentorship Program, NUST-SEECS   <u>www.acm.org/</u>
Project Mentor   February, 2017 - June, 2017
- Helped students in Data Structures and Algorithm course and guided them to come up with good project ideas.

HONORS & AWARDS

- *Top 50 candidates*, <u>9th National Chemistry Talent Contest(NCTC)</u>, Pakistan , 2012.
- *76 th/8533 Position*, <u>International KANGAROO Mathematics Contest (IKMC)</u>, Pakistan, 2008.
- *2nd Position in Class*, <u>Intermediate (HSSC)</u>, IMCB - F-7/3, 2013.
- *Recipient*, <u>NUST Academic Merit Scholarship</u>, 2013 - 2017.
- *Winner*, <u>Federal Board Table Tennis Tournament</u>, Pakistan, 2012.
- *Best player*, <u>BEE-5 Intra-batch Sports Tournament</u>, NUST-SEECS, 2015
- *Captain*, <u>Table Tennis Team</u>, Nust-SEECS, 2016 - 2017
- *Winner*, <u>National Table Tennis Tournament</u>, Fast-Islamabad, Pakistan, 2016 - 2017
- *Champions*, <u>SEECS Futsal League</u>, NUST-SEECS, 2015 - 2016, 2016-2017.