

PERSONAL INFORMATION

AYMEN AYAZ

PhD Candidate TU Eindhoven, The Netherlands

ESR Marie Curie ITN Project – OpenGTN

✉ a.ayaz@tue.nl, aymen.ayaz@philips.com

Sex Female | Date of birth 17/09/1991 | Nationality Pakistani

EDUCATION

(July 2018 - Present)

PhD Biomedical Engineering

Eindhoven University of Technology (TU/e), Eindhoven, Netherlands
Project Description: PhD researcher in the Medical Image Analysis group of the Biomedical Engineering Department of the Eindhoven University of Technology. Working as an Early Stage Researcher (ESR) on [Open Ground Truth Training Network project](#) (openGTN) funded by [Marie Curie Innovative Training Networks](#) (ITN) fellowship program (project 764465).

Topic: Realistic MRI Simulation of the Brain and Spine

Supervisor: Prof. Dr. Ir. Marcel Breeuwer

(Sep 2014 - Aug 2017)

MS Electrical Engineering

National University of Science & Technology (NUST), Islamabad, Pakistan

Program Description: The specialization stream chosen from this program focuses on digital signal processing and system designing with relevant course work on campus. While the research work was partially carried out at Neuroinformatics lab in same school and partially at Spinoza Centre for Neuroimaging in Amsterdam, the Netherlands.

Thesis: Compressed Sensing: A promise for fast laminar imaging

Supervisor: Dr. Awais Mehmood Kamboh, Dr. Matthan Caan

CGPA: 3.60/4.00

(Sep 2010 - Jul 2014)

BSc Electrical Engineering

Centre for Advanced Studies in Engineering (CASE), Islamabad, Pakistan

CGPA: 3.99/4.00

WORK EXPERIENCE

(Feb 2018 – Jun 2018)

Research Associate

EEG Research lab (School of Electrical Engineering and Computer Sciences, National University of Sciences and Technology, Islamabad, 44000 Pakistan. neuro.seecs.nust.edu.pk)

Managed the complete EEG recording and research facility at lab, from recording setups to analysis software. Assisted several undergraduate and graduate students for their multiple EEG related studies. Also, first hand working on mobile EEG projects, P300 and motor imagery studies.

(Jun 2015 - Sep 2016)

Research Assistant

Neuro-Informatics lab (School of Electrical Engineering and Computer Sciences, National University of Sciences and Technology, Islamabad, 44000 Pakistan. neuro.seecs.nust.edu.pk)

Project: MRI based automated classifier for Alzheimer's diagnosis

In this MRI research work, I employed multiple medical imaging analysis tools and softwares and various signal processing and machine learning based methods on data. Moreover, I also provided trainings to interns on neuroimaging pipelining.

(Oct 2016 - Jan 2017)

Graduate Scientific Intern

Spinoza Centre for Neuro-Imaging (Meibergdreef 75, 1105 BK Amsterdam, The Netherlands. www.spinozacentre.nl)

Project: Sparsity based medical imaging reconstruction

I worked on compressive sensing technique to accelerate the scanning at 7 Tesla MR imaging machine, for which we acquired high resolution (upto 0.5mm) MRI's at 7T and developed an optimal accelerated sampling strategy to reduce the on-scanner time. Had hands-on experience with multiple neuroimaging analysis softwares, like FSL, BART, MRecon etc and learned experiment design, subject preparation and equipment handling (pre/post experiment).

(Jun 2015 - Jul 2016)

Junior Executive IT

Alternate Energy Development Board (2nd floor OPF building, G-5/2, Islamabad, 44000 Pakistan. www.aedb.org)

I have been a GIZ GmbH's IT consultant for AEDB's IT department. During my stay at AEDB serving in solar and IT department, I have worked on net metering reference guide, case studies for solar PV panel quality standards certifications, site based climatic data analysis using AI methods, AEDB's website regular maintenance, AEDB's newsletter and google earth animations for Pakistan's wind power projects.

(Sep 2014 – Feb 2015)

Teaching Assistant

Center for Advanced Studies in Engineering (Ataturk Avenue, G-5/1, Islamabad, 44000 Pakistan. www.case.edu.pk)

ADDITIONAL INFORMATION

Projects

- Compressive sensing based variational model to reduce the on-scanner time on 7Tesla. MS thesis project (2016-2017)
- A complete fully automated classifier for Alzheimer's diagnostics using structural Neuroimaging (MRI). Research project (2015-2017)
- Interactive whiteboard development using kinect technology. Final year project in undergrad level(2013-2014)
- Hardware software co design for QRS detection in ECG signals on Xilinx Micro blaze. Semester project in undergrad level (2012-2013)
- Complete robot automation with an IP camera interface for real time processing. Semester project in undergrad level (2012-2013)

Publications

- **Aymen Ayaz**, Alessio Fracasso, Serge Dumoulin, Awais Kamboh, Matthan Caan, "Low rank regularization accelerated CS recovery for in-vivo high resolution R2* mapping", *Proceedings of the 34th Annual Society Meeting of European Society for Magnetic Resonance in Medicine and Biology (ESMRMB)*, Oct 2017, Barcelona, Spain.
- **Aymen Ayaz**, Zubair Ahmad, Khawar Khurshid, Awais Kamboh, "MRI based Automated Diagnosis of Alzheimer's: Fusing 3D Wavelet-Features with Clinical Data.", *Proceedings of the International Conference of IEEE Engineering in Medicine and Biology Society, Jeju Island, South Korea*, Aug 2017, Jeju Island South Korea.

Honors and Awards

- Gold medal in academics (BS) and highest merit scholarship awardee throughout the undergrad studies
- BEST IDEA AWARD awarded in ROBOSPRINT 2013 (National robotics competition Pakistan)
- BEST PROJECT AWARD awarded three times, for semester projects in undergrad level