

Zohreh MOSTAANI

PERSONAL DATA

ADDRESS: Rue du Praillon 9, Apt. 933, 3th Floor, 1920 Martigny, Switzerland
PHONE: +41 77 9520084
EMAIL: mostaani.zohreh@gmail.com

SUMMARY

Zohreh Mostaani got her B.Sc. in *Electrical Engineering* from UNIVERSITY OF TEHRAN, Iran, and her M.Sc. in *Electrical and Electronics Engineering* from ÖZYEGIN UNIVERSITY, Turkey. During her Master's she worked on "Optical Wireless Communication". Later, she carried out several Internships in IDIAP RESEARCH INSTITUTE, Switzerland and continued as a "Research and Development Engineer" in the "Biometrics Security and Privacy" group at IDIAP. She is now a PhD student at ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE (EPFL) university and works as a research assistant in the "Speech and Audio Processing" group at IDIAP. Her research is in understanding the relation between speech and physiological signals using machine learning and signal processing methods.

EDUCATION

2020-PRESENT	PhD student in ELECTRICAL AND ELECTRONICS ENGINEERING, EPFL University , Switzerland
2012-2015	Master of Science in ELECTRICAL AND ELECTRONICS ENGINEERING, Özyegin University , Turkey
2007-2011	Bachelor of Science in ELECTRICAL ENGINEERING, University of Tehran , Iran

EXPERIENCE

2020-PRESENT	Research Assistant at IDIAP RESEARCH INSTITUTE, Martigny, and PhD student at EPFL UNIVERSITY, Lausanne, Switzerland Working on medical application of speech processing using deep learning and signal processing methods. Supervising two Master's students in their Internship and thesis projects. Teaching Assistant for two Master's level courses, MACHINE LEARNING and INTRODUCTION TO SPEECH PROCESSING.
2019-2020	Research and Development Engineer at IDIAP RESEARCH INSTITUTE, Martigny, Switzerland Continue working on the BEAT framework and conducting research in the biometrics field.
2017-2019 18 MONTHS	Internship at IDIAP RESEARCH INSTITUTE, Martigny, Switzerland Worked on biometric data collections for face recognition and face anti-spoofing. Worked on BEAT framework by conducting machine learning experiences on local and web based platform to ensure correct functionalities of new features and updating the documentation of the software stack.
2017 6 MONTHS	Internship at IDIAP RESEARCH INSTITUTE, Martigny, Switzerland Worked on extending a framework for an ASR system to account for more usage applications. The framework was fully implemented in Docker and extending it needed knowledge of networking models, <i>docker</i> (A virtualization toolkit), <i>kaldi</i> (A speech processing toolkit), and <i>C++/Python</i> programming.
2016 6 MONTHS	Internship at IDIAP RESEARCH INSTITUTE, Martigny, Switzerland Worked on <i>Gaze Estimation</i> by using multimodal convolutional neural network. <i>Theano</i> and <i>Caffe</i> deep learning toolkits were used for implementing and training neural networks.
2012-2015	Research Assistant at ÖZYEGIN UNIVERSITY, Istanbul, Turkey. Worked on <i>physical layer</i> aspects of communication systems such as multi-relaying schemes in optical wireless communications with different channel models.
2012-2014	Teaching Assistant for LINEAR ALGEBRA, WIRELESS COMMUNICATIONS, MATH 103, 105, 104, and 106, and PHYSICS LABORATORY 101 and 102.

SELECTED COURSE WORK

- 2021 | FUNDAMENTALS OF STATISTICAL PATTERN RECOGNITION
Learned about and completed projects on machine learning concepts such as linear regression, logistic regression, neural networks, PCA, LDA, K-Means, GMMs, and SVMs.
- 2020 | STATISTICAL SEQUENCE PROCESSING
Learned about statistical pattern recognition using supervised and unsupervised learning as well as statistical sequence modeling using Markov Models.
- 2020 | SPEECH AND AUDIO CODING
Learned about sound production and perception mechanisms, sound signal processing such as sampling, quantization, and spectral analysis, and speech coding such as linear predictive coding (LPC) and MPEG-1 layer 3 (mp3).

SELECTED PUBLICATIONS

Z. Mostaani, R.S. Prasad, B. Vlasenko, M. Magimai-Doss, “Modeling of Pre-Trained Neural Network Embeddings Learned From Raw Waveform for COVID-19 Infection Detection”, in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2022.

Z. Mostaani, V.S. Nallanthighal, A. Härmä, H. Strik, M. Magimai-Doss, “On the relationship between speech-based breathing signal prediction evaluation measures and breathing parameters estimation”, in *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2021.

V.S. Nallanthighal, Z. Mostaani, A. Härmä, H. Strik, M. Magimai-Doss, “Deep learning architectures for estimating breathing signal and respiratory parameters from speech recordings”, in *Neural Networks*, 2021.

G. Heusch, A. George, D. Geissbühler, Z. Mostaani, S. Marcel, “Deep models and shortwave infrared information to detect face presentation attacks”. in *IEEE Transactions on Biometrics, Behavior, and Identity Science*, 2020.

A. George, Z. Mostaani, D. Geissenbuhler, O. Nikisins, A. Anjos, S. Marcel, “Biometric Face Presentation Attack Detection with Multi-Channel Convolutional Neural Network”, in *IEEE Transactions on Information Forensics and Security*, 2019.

K. Kotwal, Z. Mostaani, S. Marcel, “Detection of age-induced makeup attacks on face recognition systems using multi-layer deep features”. in *IEEE Transactions on Biometrics, Behavior, and Identity Science*, 2019.

AWARDS AND HONORS

- 2020 Full Scholarship, RAship, EPFL, Lausanne, Switzerland.
2012 Full Scholarship, TAship and RAship, Özyegin University, Istanbul, Turkey.
2007 Full Scholarship, University of Tehran, Tehran, Iran.
2007 Ranked 206 among 400,000 participants in the nationwide university entrance exam, Iran.
2005 AND 2006 Won acceptance in first stage of national mathematics Olympiad, Iran.
2006 Won acceptance in first stage of national Literature Olympiad, Iran.

SKILLS

- Languages: Proficient in Python, MATLAB, and \LaTeX . Familiar with Bash script, HTML, Node.js, and C++.
- Toolkits: PyTorch, Tensorflow, Scikit-learn.
- Platforms: GNU/Linux and Microsoft Windows.

LANGUAGES

- PERSIAN: Native
ENGLISH: Fluent
FRENCH: Intermediate Knowledge
TURKISH: Basic Knowledge