

Parvaneh JANBAKHSHI

Data scientist at Bayer AG
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RESEARCH INTERESTS

Speech and Audio Signal Processing (for clinical applications), Machine Learning and Deep Learning, Biological Signal Processing

EDUCATION

- 2018–2022 Doctor of Philosophy (PhD) in ELECTRICAL ENGINEERING
École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland
GPA: 5.5/6, 12 credits
- 2014–2016 Master of Science in BIOMEDICAL ENGINEERING (BIOELECTRICS)
Sharif University of Technology, Tehran, Iran
GPA: 4/4 (18.88/20), 29 credits–ranked 2nd
- 2009–2014 Bachelor of Science in BIOMEDICAL ENGINEERING (BIOELECTRICS)
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
GPA: 3.70/4 (17.27/20), 140 credits

RESEARCH EXPERIENCE

Data scientist in Bayer AG, Berlin, Germany

Doctoral Researcher in Idiap Research Institute, Martigny, Switzerland

- Thesis: Automatic pathological speech assessment
 - Supervisor: Prof. H. Bourlard and Dr. I. Kodarsi, 2022
- Relevant coursework: Deep Learning, Optimization for Machine Learning, Statistical Sequence Processing

Researcher of Cognitive Neurobiology Laboratory in School of Cognitive Sciences Institute, Tehran, Iran:

- Project: Investigating the phase amplitude coupling in the middle temporal visual area of rhesus monkeys
 - Supervisors: Dr. M. R. Daliri and Dr. M. Esghaei, 2017

Master of Science Thesis in Sharif University of Technology, Tehran, Iran:

- Thesis: Extraction of respiratory information from ECG and its application for sleep apnea detection
 - Supervisor: Prof. M. B. Shamsollahi, 2016
- Relevant coursework: Pattern Recognition, Biological Signal Processing

Bachelor of Science Thesis in Amirkabir University of Technology, Tehran, Iran:

- Thesis: Designing and implementing an automatic neuromuscular electro-stimulation device to prevent diseases such as deep vein thrombosis and varicose veins
 - Supervisor: Dr. A. Maleki, 2014

PUBLICATIONS

- Schu, G., **Janbakhshi, P.**, Kodrasi, I., “On Using the UA-Speech and Torgo Databases to Validate Automatic Dysarthric Speech Classification Approaches”, in Proc. ICASSP, 2023.
- **Janbakhshi, P.**, Kodrasi, I., “Adversarial-free speaker identity-invariant representation rearing for automatic dysarthric speech classification”, in Proc. INTERSPEECH, 2022.
- Fougeron, C., Audibert, N., Kodrasi, I., **Janbakhshi, P.**, et al. “Comparison of 5 methods for the evaluation of intelligibility in mild to moderate French dysarthric speech”, in Proc. INTERSPEECH, 2022.
- **Janbakhshi, P.**, Kodrasi, I., “Experimental investigation on STFT phase representations for deep learning-based dysarthric speech detection”, in Proc. ICASSP, 2022.
- **Janbakhshi, P.**, Kodrasi, I., “Supervised speech representation learning for Parkinson’s disease classification”, in Proc. ITG Conference on Speech Communication, 2021.
- **Janbakhshi, P.**, Kodrasi, I., Bourlard, H., “Automatic dysarthric speech detection exploiting pairwise distance-based convolutional neural networks”, in Proc. ICASSP, 2021.
- **Janbakhshi, P.**, Kodrasi, I., Bourlard, H., “Subspace-based learning for automatic dysarthric speech detection”, Signal Processing Letters, 2021.
- **Janbakhshi, P.**, Kodrasi, I., Bourlard, H., “Automatic pathological speech intelligibility assessment exploiting subspace-based analyses,” IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2020.
- **Janbakhshi, P.**, Kodrasi, I., Bourlard, H., “Synthetic speech references for automatic pathological speech intelligibility assessment”, in Proc. ICASSP, 2020.
- **Janbakhshi, P.**, Kodrasi, I., Bourlard, H., “Spectral subspace analysis for automatic assessment of pathological speech intelligibility,” in Proc. INTERSPEECH, 2019.
- **Janbakhshi, P.**, Kodrasi, I., Bourlard, H., “Pathological speech intelligibility assessment based on the short-time objective intelligibility measure”, in Proc. ICASSP, 2019.
- **Janbakhshi, P.**, Shamsollahi, M. B., “Sleep apnea detection from single-lead ECG using features based on ECG-derived respiration (EDR) signals”, IRBM, 2018.
- **Janbakhshi, P.**, Shamsollahi, M. B., “ECG-derived respiration estimation from single-lead ECG using gaussian process and phase space reconstruction methods”, Biomedical Signal Processing and Control, 2018.
- Maleki, A., **Janbakhshi, P.**, “Intelligent device for preventing varicose and deep vein thrombosis based on electrical stimulation”, Patented in Iran, Patent No. 83492, 2014

HONORS & AWARDS

- PhD student award by Idiap Research Institute
- **Ranked 2** in Master of Science, Bioelectric Major, Electrical Engineering Department, Sharif University of Technology (2016)
- **Ranked 50** among more than 15000 participants in Nationwide University Entrance Exam in Master of Science, Biomedical Engineering (2014)
- Bachelor of Science thesis was awarded by the university as the **best BSc project** of the year in Bioelectric Engineering.

AD-HOC REVIEWER

Nature Scientific Reports, Springer Behavior Research Methods, Elsevier Computers in Biology and Medicine, Elsevier Speech Communication, IEEE/ACM Transactions on Audio, Speech, and Language Processing.

COMPUTER SKILLS

Technical Softwares: Pytorch, Matlab, Praat
Programming languages: Python