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, Medical Image Processing, 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 & Work Experience

2022–Present **Data Scientist** at Bayer AG, Berlin, Germany
- Projects: Detection of adverse events (AEs) from textual data, MRI contrast enhancement, Parkinson's disease vocal biomarkers

2022 **Postdoctoral Researcher** at Idiap Research Institute, Martigny, Switzerland

2018–2022 **Doctoral Researcher** at Idiap Research Institute, Martigny, Switzerland
- Thesis: Automatic pathological speech assessment
- Selected coursework: Deep Learning, Optimization for Machine Learning, Statistical Sequence Processing

2017 **Intern** at Cognitive Neurobiology Laboratory in Cognitive Science Institute, Tehran, Iran
- Project: Investigating the phase-amplitude coupling in the middle temporal visual area of Rhesus monkeys

2016 **Master of Science Thesis** at Sharif University of Technology, Tehran, Iran
- Thesis: Extraction of respiratory information from ECG and its application for sleep apnea detection
- Selected coursework: Pattern Recognition, Biological Signal Processing

2014 **Bachelor of Science Thesis** at 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 (*patented in Iran, Patent No. 83492*)

Selected Publications

○ For a complete list of publications and patents, please visit my Google Scholar Profile.

Conference | I. M. Baltruschat, **P. Janbakhshi**, M. Dohmen and M. Lenga, "Uncertainty estimation in contrast-enhanced MR image translation with multi-axis fusion", In Proc. ISBI, 2024.

Conference | **P. Janbakhshi**, I. Kodrasi, "Adversarial-free speaker identity-invariant representation learning for automatic dysarthric speech classification", In Proc. INTERSPEECH, 2022.

Conference | **P. Janbakhshi**, I. Kodrasi, "Supervised speech representation learning for Parkinson's disease classification", In Proc. ITG Conference on Speech Communication, 2021.

Journal | **P. Janbakhshi**, I. Kodrasi, H. Bourlard, "Subspace-based learning for automatic dysarthric speech detection", Signal Processing Letters, 2021

Journal | **P. Janbakhshi**, I. Kodrasi, H. Bourlard, "Automatic pathological speech intelligibility assessment exploiting subspace-based analyses," IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2020

Conference | **P. Janbakhshi**, I. Kodrasi, H. Bourlard, "Pathological speech intelligibility assessment based on the short-time objective intelligibility measure", In Proc. ICASSP, 2019

Journal | **P. Janbakhshi**, M. B. Shamsollahi, "Sleep apnea detection from single-lead ECG using features based on ECG-derived respiration (EDR) signals", IRBM, 2018.

Honors & Awards

2023 | Individual performance award (IEZ), Bayer AG

2021 | PhD student award by Idiap Research Institute

2016 | Ranked 2nd in the Master of Science Bioelectric program at Sharif University of Technology

2014 | Ranked 50th among more than 15000 participants in nationwide university entrance exam in MSc for Biomedical Engineering

2013 | Best BSc project of the year in Bioelectric Engineering department

Academic Duties & Mentorships

2023 | **Intern Supervisor**, CVSA team at Bayer AG

○ Project: AI for automatic Parkinson's disease voice assessment

2021 | **Teaching Assistant** for Linear Algebra and Probability course of Master in Artificial Intelligence, UniDistance Suisse

2020–present | **Reviewer for Journals**: Nature's Scientific Reports, Springer's Behavior Research Methods, Elsevier's Computers in Biology and Medicine, Elsevier's Speech Communication, IEEE/ACM Transactions on Audio, Speech, and Language Processing

2020–present | **Reviewer for Conferences**: IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Annual Conference of the International Speech Communication Association (Interspeech)

Skills

Programming | Python

Software and Frameworks | Matlab, Praat, LaTeX, Pytorch, Hydra, Git, SimpleITK, Pydicom, PyTest

Languages | English (fluent), German (intermediate), Farsi (native)