# Parvaneh Janbakhshi

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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: MRI contrast enhancement, 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)