Yasaman Safarkhanlo

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Professional Experience

Research and Data Manager, Stroke Center — **Bern, Switzerland**
Inselspital, University Hospital Bern — *Sep 2024 – Present*
Leading data strategy and AI integration for stroke research. Designing NLP algorithms for report digitization, coordinating cross-disciplinary teams, and ensuring clinical usability.

PhD candidate in Biomedical Engineering — **Bern, Switzerland**
Inselspital, University Hospital Bern — *May 2021 – Present*
Spearheading AI-enabled cardiac MRI research within the SNF-funded PRE-MITRA project. Collaborated with clinical, technical, and academic stakeholders.

Clinical Research Assistant — **Zurich, Switzerland**
Radio-Oncology Clinic, University Hospital Zurich — *Mar 2019 – Jul 2019*
Performed quality assurance for MRI-guided radiotherapy and optimized imaging protocols.

Research Assistant — **Tehran, Iran**
Institute for Research in Fundamental Science — *Sep 2016 – Sep 2018*
Conducted research in computational neuroscience

Astrophysics and Astronomy Olympiad Teacher — **Tehran, Iran**
Various High Schools — *Sep 2013 – Sep 2015*
Prepared students for national and international competitions, at Farzanegan 4, Farzanegan 1, Allameh Helli 1 High Schools.

Key Skills

Data Science & AI in Healthcare: Applied ML/NLP in clinical settings, with domain knowledge in cardiology, neurology, and radiology. Experienced in structured data extraction and healthcare analytics.

Digital Health Strategy: Led multi-stakeholder projects on clinical data pipelines and infrastructure, aligning with FAIR principles and regulatory frameworks.

Consulting Readiness: Skilled in cross-functional collaboration, research translation, and communicating technical findings to clinicians and leadership.

Programming & Tooling: Python (pandas, scikit-learn, PyTorch), R, SQL, Docker, Git, LaTeX. Experience with REST APIs, data wrangling, and annotation tools.

Big Data & Clinical Databases: Experience working with hospital data systems, EPIC, secuTrial, SQL/NoSQL databases.

Languages: German (Fluent), English (Fluent), Persian (Native)

Education

PhD candidate in Biomedical Engineering — **Bern, Switzerland**
Graduate School for Cellular and Biomedical Sciences (GCB), UniBe — *May 2021 – Present*
PRE-MITRA Swiss National Science Foundation (SNF) (grant number: 197754)

Master of Science in Physics — **Zurich, Switzerland**
University of Zurich & ETH Zurich — *Sep 2018 – Jan 2021*
Thesis on quality assurance of MRI-guided radiation therapy.

Master of Science Minor in Data Science — **Zurich, Switzerland**
University of Zurich — *Sep 2020 – Jan 2021*
Coursework in Statistical Modeling, Likelihood Inference, High-Performance Computing

Bachelor of Science in Physics — **Tehran, Iran**
Sharif University of Technology — *Sep 2012 – Feb 2018*
Coursework in Neuroscience, Biophysics, and Statistical Mechanics.

Diploma of Mathematics and Physics — **Tehran, Iran**
Farzanegan 1 High School — *Sep 2008 – Jun 2012*
National Organization for Development of Exceptional Talents (NODET)

Awards

2022: Secured CHF 100K from Center for Artificial Intelligence in Medicine Fund (CAIM) for advancing AI in medical diagnostics, Bern, Switzerland

2011: Bronze Medal at National Olympiad in Astronomy and Astrophysics, IRYSC(Iranian Young Scholars Club), Tehran, Iran

Travel Grants Recognized for presenting innovative research at the ISMRM annual meeting:
2024: ISMRM trainee stipend for conference attendance, Singapore

2023: ISMRM trainee stipend for conference attendance, Toronto, Canada

2023: GCB Travel Grant for ISMRM conference attendance, Bern, Switzerland

Selected Projects & Initiatives

AI for Stroke Reports: Developed a prototype NLP pipeline for structured data extraction from stroke MRI reports in German; enabling faster triage and retrospective analysis.

Cardiac MRI Automation: Led model development for automatic mitral regurgitation quantification, contributing to a broader effort for diagnostic standardization.

Conferences and Schools

May 2025: **Frequency-Modulated BSSFP: A Novel And Time-Efficient Approach For Multiparametric Mapping (Digital Poster #3371)**
N. Plähn, Y. Safarkhanlo, et al.
ISMRM 2025, Wednesday, 14 May 2025, 09:15–10:15, Exhibition Hall #28
Honolulu, Hawaii, USA

May 2025: **Bias Field Correction For T1 Mapping Using Phase-Cycled BSSFP (Oral Presentation #1050)**
N. Plähn, Y. Safarkhanlo, et al.
ISMRM 2025, Wednesday, 14 May 2025, 16:45–16:57, Room 320
Honolulu, Hawaii, USA

May 2025: **Evaluation Of 3D Radial Phyllotaxis Trajectories For Artifact-Free Imaging And Parametric Mapping (Oral Presentation #0636)**
E. S. Peper, Y. Safarkhanlo, et al.
ISMRM 2025, Tuesday, 13 May 2025, 15:57–16:09, Room 312
Honolulu, Hawaii, USA

May 2024: **Determining the Reproducibility and Reliability of 2D- and 4D flow MRI Mitral Valve Regurgitation Quantification Methods**
Abstract #4768, ISMRM 2024
Singapore

May 2024: **Analytical T1, T2, proton density, and magnetic field inhomogeneity quantification in the brain using phase-cycled bSSFP**
Abstract #2172, ISMRM 2024
Singapore

May 2024: **Simultaneous brain susceptibility, T1 and T2 quantification at 7T with phase-cycled balanced steady-state free precession**
Abstract #3715, ISMRM 2024
Singapore

June 2023: **Off-resonance encoded fat suppression methods for 5D whole-heart free-running cardiac MRI at 1.5 T**
Abstract #4984, ISMRM 2023
Toronto, Canada

June 2023: **Low-Rank Subspace-Constrained Compressed Sensing Reconstruction of Highly Accelerated Phase-Cycled BSSFP MRI for Fat Fraction Quantification**
Abstract #4963, ISMRM 2023
Toronto, Canada

June 2024: **Comparison of mitral valve regurgitation quantification using 4D flow versus standard cardiac magnetic resonance (Oral Presentation #O11)**
SSC/SSCS-SSP/SSTS Joint Annual Meeting 2023
Messe Basel, Basel, Switzerland

July 2023: **Evaluation of Mitral Valve Regurgitation by Intraventricular Four-dimensional Flow Cardiovascular Magnetic Resonance – A Systematic Review on the Technological Aspects and Current Clinical Applications. (Poster #5)**
INTERNATIONAL WORKSHOP MR – yesterday, today, and tomorrow
Albert-Ludwigs-Universität Freiburg, 79098 Freiburg, Germany

Sep 2019: **13th EXCITE Zurich Summer School on Biomedical Imaging**
Institute for Biomedical Engineering, ETH Zurich
Zurich, Switzerland

Publications

2025: **Reproducibility and reliability of flow quantification using CMR 2D-phase contrast and 4D-Flow in secondary mitral valve regurgitation**
Y. Safarkhanlo, et al.
The International Journal of Cardiovascular Imaging, 41(3):1–10, DOI: 10.1007/s10554-025-03421-x

2025: **ORACLE: An analytical approach for T1, T2, proton density, and off-resonance mapping with phase-cycled balanced steady-state free precession**
N. Plähn, Y. Safarkhanlo et al.
Magnetic Resonance in Medicine, DOI: 10.1002/mrm.30388

2025: **Quantitative susceptibility mapping in the human brain at 7T with phase-cycled balanced SSFP**
B. C. Acikgoz, Y. Safarkhanlo, et al.
Magnetic Resonance in Medicine, DOI: 10.1002/mrm.30571

2025: **Comparison between fast-interrupted steady-state (FISS) and water excitation for fat signal suppression in non-contrast-enhanced free-running whole-heart MRI**
Y. Safarkhanlo et al.
medRxiv, DOI: 10.1101/2025.01.16.25320660

2025: **Sex-specific differences in suspected myocarditis presentations and outcomes**
J. Schütze, Y. Safarkhanlo et al.
International Journal of Cardiology, DOI: 10.1016/j.ijcard.2024.132593

2024: **Impact of tafamidis on myocardial function and CMR tissue characteristics in transthyretin amyloid cardiomyopathy**
S. Dobner, Y. Safarkhanlo et al.
ESC Heart Failure, DOI: 10.1002/ehf2.14815

2024: **Longitudinal evolution of ventricular function and cardiac magnetic resonance imaging tissue characteristics in tafamidis-treated transthyretin amyloid cardiomyopathy**
S. Dobner, Y. Safarkhanlo, et al.
Amyloid, DOI: 10.1080/13506129.2023.2284108

2024: **Prognostic value of visual and quantitative CMR regional myocardial function in patients with suspected myocarditis**
B. Bernhard, Y. Safarkhanlo et al.
The International Journal of Cardiovascular Imaging, DOI: 10.1007/s10554-024-03059-1

2023: **Mitral valve regurgitation assessed by intraventricular CMR 4D-flow**
Y. Safarkhanlo et al.
The International Journal of Cardiovascular Imaging, DOI: 10.1007/s10554-023-02893-z

2023: **Predictive value of cardiac magnetic resonance right ventricular longitudinal strain in patients with suspected myocarditis**
B. Bernhard, Y.Safarkhanlo et al.
Journal of Cardiovascular Magnetic Resonance, DOI: 10.1186/s12968-023-00957-6

2023: **Prognostic value of right ventricular function in patients with suspected myocarditis undergoing cardiac magnetic resonance**
B. Bernhard, Y.Safarkhanlo et al.
Cardiovascular Imaging, DOI: 10.1016/j.jcmg.2022.08.011

2024: **Determining the Reproducibility and Reliability of 2D- and 4D flow MRI Mitral Valve Regurgitation Quantification Methods**
Y. Safarkhanlo et al.
Abstract #4768, ISMRM2024, Singapore

2024: **Analytical T1, T2, proton density, and magnetic field inhomogeneity quantification in the brain using phase-cycled bSSFP**
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2023: **Off-resonance encoded fat suppression methods for 5D whole-heart free-running cardiac MRI at 1.5 T**
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Abstract #4984, ISMRM2023, Toronto, Canada

2023: **Low-Rank Subspace-Constrained Compressed Sensing Reconstruction of Highly Accelerated Phase-Cycled BSSFP MRI for Fat Fraction Quantification**
E. Peper, Y. Safarkhanlo et al.
Abstract #4963, ISMRM2023, Toronto, Canada

2021: **Patient Specific QA for Magnetic Resonance Guided Linac**
Y. Safarkhanlo
Medical Physics Master Thesis, University of Zurich (UZH)

2020: **Quality Assurance for the adaptive workflow on an MRI Linac**
L.Wilke, S. Ehrbar, Y.Safarkhanlo, et al.
PO-1784, Radiotherapy & Oncology, the green journal, DOI: 10.1016/S0167-8140(21)01802-8

2019: **Evaluation of an MR compatible phantom for patient-specific QA**
Y.Safarkhanlo et al.
Oral presentation, 53rd SSRMP Annual Meeting, Paul Scherrer Institute (PSI), Villigen, Switzerland