Sari Sadiya, PhD

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Professional Summary

R2 researcher at Frankfurt Goethe Universität. Dual PhD in Computer Science and Cognitive Neuroscience with a strong background in Mathematics. Previously a VLSI engineer at Apple. My work focuses on machine learning applications for neuroscience, bioinformatics, and computer vision.
Beside research, I am a project director at an education nonprofit, and moonlight as a cellist.

Experience

- **Machine Learning Consultant**
  - **Jience (2024)**: Implemented a recommendation system for a hiring platform.
    Tech stack: Next.js, Flask, Python, MongoDB, Weaviate, Google Cloud Functions.
  - **Aneesi.ai (2023)**: (pre-seed) Designed and implemented an LLM-based personalized b2b marketing agent. The company went on to acquire pre-seed funding.
    Tech stack: React, Flask, Python, Firestore, Weaviate, SQL, Google Cloud Functions.
  - **GamerTag (2023)**: (post series-A) Implement a embedding-based recommender system.
    Tech stack: Python, Zilliz, AWS
- **Frankfurt Institute for Advanced Studies at Goethe Universität** Frankfurt am Main, Germany
  - **Research Associate**: Deep learning for computer vision and bioinformatics.
  - **Course Instructor**: Taught 4 semesters of "Pattern Analysis and Machine Intelligence Seminar".
  - **Thesis Supervisor**: Mentored 8 junior researchers, resulting several conference publications.
- **Michigan State University** Michigan, USA
  - **Course Instructor and Teaching Assistant (2019-2020)**: Supervised 3 Independent Study Projects. Lectured and wrote assignments and for *Introduction to Programming* and *Introduction to AI*.
  - **Research Assistant (2015-2018)**: Developed conversational robot learning from demonstration systems.
- **Apple Inc.** Haifa Matam Center, Israel
  - **VLSI Engineer (2013 -2015)**: Circuit design and verification with Verilog and System Verilog Assertions.

Technical Skills

- **Machine Learning**: Extensive experience in training and fine-tuning convolutional and transformer-based models.
  Tech Stack: *PyTorch, Sklearn, Numpy, Pandas, OpenCV, Slurm, MLflow, Hadoop, C++*
- **Cloud Applications**: Proficient in deploying machine learning models using various cloud services.
  Tech Stack: *Cloud Firestore, Weaviate, AWS Sagemaker, Docker, Google Cloud Functions*
- **Full Stack Development**: I build accessible frontends to deliver ML products to users.
  Tech Stack: *NextJS, restfulAPIs, VueJS, Bootstrap, PWA, PyQt, Flask, MongoDB, SQL*
- **Experimental Psychology**: Designing and conducting behavioral, eye-tracking, EEG, and fMRI experiments.
  Coding and Statistical Analysis: *Matlab, FreeSurfer, EEGLAB, PsychoPy, E-Prime, SPSS*
- **Hardware and Embedded Development**: Former Engineer at Apple.
  Tech Stack: *Verilog and System Verilog Assertions, x86 Assembly*

Education

- **Dual PhD in Computer Science and Cognitive Neuroscience** Michigan State University
  Academic advisers Dr. Ghassemi (CSE) and Dr. Liu (PSY) *Aug. 2017 – Dec. 2022*
  Thesis Title: *Machine Learning Approaches for Processing and Decoding Attention Modulation of Sensory Representations from EEG*
- **MSc Computer Science (Sponsored by the Fulbright program)** Michigan State University
  Academic adviser Dr. Joyce Chai (now at University of Michigan) *Aug. 2015 – May. 2017*
  Final Project: *Interactive Human-Robot One-Shot Task Structure Learning from Demonstration*

- **BSc Mathematics** — Technion - Israel Institute of Technology
  Final GPA 3.6 — *Dec. 2009 – Apr. 2013*
- **BSc Computer Science** — Technion - Israel Institute of Technology
  Final GPA 3.6 — *Dec. 2009 – Apr. 2013*

Languages

- **English:** Full professional fluency ($C1$ equivalent Toefl score)
- **German**: Elementary proficiency
- **Arabic:** Native
- **Hebrew:** Native

Selected Publications

Particularly interesting past publications. Joint first authorship with students I supervised is marked by *. For a full list of papers please see my Google Scholar Profile.

- CoRR 2024: L. Khun*, **S. Sadiya***, Jörg Schlötterer, Christin Seifert, Gemma Roig;
  Efficient Unsupervised Shortcut Learning Detection and Mitigation in Transformers
  Manuscript under review
- BIBM 2023: T. Ettling*, **S. Sadiya***, G. Roig;
  Different Algorithms (Might) Uncover Different Patterns: A Brain-Age Prediction Case Study
  In Proceedings of the 2023 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)
- ICASSP 2022: **S. Sadiya**, T. Alhanai, M. Ghassemi;
  Feature Imitating Networks
  In Proceedings of the 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- NER 2021: **S. Sadiya**, T. Alhanai, M. Ghassemi;
  Artifact Detection and Correction in EEG data: A Review
  In Proceedings of the 2021 IEEE International Conference on Neural Engineering (NER).
- Frontiers 2020: **S. Sadiya**, T. Alhanai, T. Liu, M. Ghassemi;
  Unsupervised EEG Artifact Detection and Correction.
  In Frontiers in Digital Health. Volume 2.

Invited Talks and Workshops

- **Cutting Gardens 2023**: S. Sadiya, D. Bersch, G. Roig
  Net2Brain: Unraveling Cognitive Functionality as Captured by EEG Using Pretrained Neural Networks
- **Conference on Cognitive Computational Neuroscience 2023**: S. Sadiya, A. Gifford, M. Vilas
  The Algonauts Hackathon: Predicting Brain Responses to Images with Pretrained Neural Networks.

Awards & Honors

- **Dissertation Completion Fellowship** — 2021
  Support for Students completing their dissertation, from the Graduate School at MSU. Total value: 5,416$
- **Cultural Heritage Informatics Fellowship** — 2020
  Researching digital methods and computational approaches for cultural informatics. Total value: 4,000$
- **Graduate Office Fellowship** — 2020
  Awarded to graduate students as a summer assistantship. Total value: 6,942$
- **Fulbright Scholarship program for international educational exchange** — 2015
  Full Scholarship, Granted by the U.S. Bureau of Educational and Cultural Affairs. Total value: 30,000$
- **Dean Honour List, Technion - Israeli Institute for Technology.** — 2013
  Top 10% of students in the program

Additional Experience

Project director for the Refugee Outreach Collective *"Global Classroom"*, a partnership with Central Michigan University. The project expands educational access to individuals experiencing displacement at Malawi Dzelaka refugee camp through participation in accredited online classes.