Sari Sadiya, PhD

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Autobiography

R2 researcher at Goethe University. I have a dual PhD in Computer Science and Cognitive Neurocience. Previously, I worked in VLSI at Apple Inc. and studied Mathematics and Computer Science at the Technion. My main research interests are computational neuroscience, brain-computer interfaces, and digital humanities. Beside research, I am passionate about expanding access to educational opportunities, and moonlight as a cellist.

Education

- **Dual PhD in Cognitive Neuroscience and Computer Science** — Michigan State University
  Academic advisers Dr Taosheng Liu (PSY) and Dr Mohammad Ghassemi (CSE) — *Aug. 2017 – Dec. 2022*

- **MSc Computer Science (Fulbright)** — Michigan State University
  Academic adviser Dr Joyce Chai. Sponsored by the Fulbright program. — *Aug. 2015 – May. 2017*

- **BSc Mathematics** — Technion - Israel Institute of Technology
  Final equivalent to DE 1.3 — *Dec. 2009 – Apr. 2013*

- **BSc Computer Science** — Technion - Israel Institute of Technology
  Final equivalent to DE 1.3 — *Dec. 2009 – Apr. 2013*

Experience

- **Frankfurt Institute for Advanced Studies** — Frankfurt am Main, Germany
  - **Postdoctoral Fellow**: Under Principal Investigator Dr Gemma Roig.
  - **Instructor**: Goethe University Frankfurt, Pattern Analysis and Machine Intelligence Seminar.
  - **Thesis Supervisor**: Supervised multiple Bachalor and Master theses

- **Machine Learning Consultant**
  - **Aneesi.ai (2023)**: Designed and implemented an LLM based personalized b2b marketing system. The company went on to acquire pre-seed funding.
  - **GamerTag (2023)**: (post series-A) Helped implement an embedding-based recommender system.

- **Michigan State University** — East Lansing, MI
  - **Instructor: Independent Study Project (Spring 2019)**: MSU / Refugee Outreach Collective joint project for building a penpal mobile application.
  - **Teaching Assistant (2019-2020)**: Introduction to Programming, Introduction to AI.
  - **Research Assistant (2015-2018)**: Human robot interaction and multi-modal task learning from demonstration. Funded by the DARPA SIMPLEX and XAI programs.

- **Apple Inc.** — Matam Center, Haifa, Israel
  VLSI Engineer Mar. 2013 - Aug. 2015

- **Technion - Israeli Institute for Technology.** — Haifa, 3200003, Israel
  - **CS Industrial Project**: Technion / IBM joint industrial project supervised by Dr Salman
  - **Applied Mathematics Project**: Research on *"Stable Marriage Problems"* supervised by Dr Wolansky
  - **Mathematical Analysis Project**: Research on *"Andronov Hopf bifurcations"* supervised by Dr Zhitomerski

Fellowships, Scholarships, and Awards

- **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 heritage. 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 – 2017
  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
  Academic Award Given to top 10% of students in program

Service

- **Computer Environment Committee** Michigan State University
  Department of Computer Science Graduate Student representative *2017-2019*

- **Engineering Graduates Studies Committee** Michigan State University
  Department of Computer Science Graduate Student representative *2017-2018*

- **Reviewer**
  ICCV (2023). *AAAI* (2017, 2022), *EMNLP-IJCNLP* (2019). *IEEE Conference on Big Data* (2018).
  CVPR (2018), *ACM Conference on Intelligent User Interfaces* (2016).

Technical Skills

Machine Learning: PyTorch, Sklearn, Numpy, Pandas, OpenCV, Slurm, Matlab
Full Stack Development: Vue, Bootstrap, Flask, Cloud Firestore, Weaviate, PWA, C++, Assembly
Experimental Psychology: Matlab MGL, PsychoPy, SPSS.
Hardware: Verilog and System Verilog Assertions

Languages

- **Arabic**: Native Language.
- **Hebrew**: Native Language.
- **English**: High Level of writing, reading, and speaking abilities (107 Tofel Score).
- **German**: Equivalent to A2 proficiency.

Community Involvement

- **Project Director** 2018 - present
  *The Refugee Outreach Collective (established 2015) is 501(c)(3) non-profit that leverages
  university resources and networks to expand access to educational opportunities to those
  who have experienced displacement.*

- **English Tutor through Paper Airplanes** 2018
  Tutoring conflict-affected individual from the MENA region through Skype.

- **Co-founder at "Almahata"** 2013 - 2017
  *'Almahata Youth Cooperative', was a non-profit cooperative that operated in Haifa. The cooperative
  functioned daily, hosting over 300 lectures, workshops, book launchings and independent film screenings.*

Additional Experience

Professional cellist and session musician, performed both locally and internationally with several groups
including the Tarshiha Orchestra and Bayat Ensemble. Composed and recorded music for several theater
productions and media projects.

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PUBLICATIONS

My research is at the intersection of Computer Science and Cogntive Psychology. Generally, Computer Science publications in conference proceedings are considered more prestigious, while journal publication are preferred in Cognitive Psychology. Joint first authorship with students I supervised is marked by *.

PEER-REVIEWED COMPUTER SCIENCE PUBLICATIONS

- 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)

- 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)

- 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).

- 2020: **S. Sadiya**, T. Alhanai, T. Liu, M. Ghassemi; *Unsupervised EEG Artifact Detection and Correction.*
  In Frontiers in Digital Health. Volume 2.

- 2020: **S. Sadiya**, T. Alhanai, T. Liu, M. Ghassemi; *EEG Channel Interpolation Using Deep Encoder-decoder Networks.*
  In Proceedings of the IEEE International Conference on Bioinformatics and Biomedicine (BIBM).

- 2018: S. Yang, **S. Sadiya**, Q. Gao, Y. Chai; *Commonsense Action Explanation in Human-Agent Communication.*
  In Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP).

- 2018: J. Chai, Q. Gao, L. She, S. Yang, **S. Sadiya**, G. Xu; *Language to Action: Towards Interactive Task Learning with Physical Agents.*
  In Proceeding of the International Joint Conferences on Artificial Intelligence Organization (IJCAI).

- 2018: H. Karimi, PC. Roy, **S. Sadiya**, J. Tang; *Multi-Source Multi-Class Fake News Detection.*
  The 27th International Conference on Computational Linguistics (COLING).

- 2016: C. Liu, S. Yang, **S. Sadiya**, N. Shuka, Y. He, S. Zhu, and J. Y. Chai; *Joint Learning Task Structures from Language Instruction and Visual Demonstration.*
  In Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP).

PEER-REVIEWED COGNITIVE SCIENCE PUBLICATIONS

- 2023: K. Dwivedi, **S. Sadiya**, M. Balode, G. Roig, R. Cichy; *Visual features are processed before navigational affordances in the human brain*
  (Forthcoming in Nature Scientific Reports)

- 2023: A. Burgoyne, **S. Sadiya**, L. Harris, M. Becker, J. Brascamp, D. Hambrick; *Revisiting the Self-Generation Effect in Proofreading*
  In Psychological Research: Journal of Perception, Attention, Memory, and Action

- 2022: T. Liu, M. Fang, **S. Sadiya**; *Adaptive visual selection in feature space*
  Psychonomic Bulletin & Review

PREPRINTS

- 2023: A. Gifford, B. Lahner, **S. Sadiya**, M. Vilas, A. Lascelles, A. Oliva, K. Kay, G. Roig, R. Cichy
  The Algonauts Project 2023 Challenge: How the Human Brain Makes Sense of Natural Scenes

- 2022: R. Khanmohammadi, **S. Sadiya**, S. Esfandiarpour, T. Alhanai, M. Ghassemi
  MambaNet: A Hybrid Neural Network for Predicting the NBA Playoffs

MANUSCRIPTS UNDERPREPERATION

- 2024: **S. Sadiya**, M. Menceloglu, E. Chantland, M. Ghassemi, S. Revizza, T. Liu
  The Number of Attentional Templates Impacts The Modulation of Sensory Representations

- 2024: **S. Sadiya**, D. Bersch, K. Dwivedi, M. Vilas, R. Cichy, G. Roig
  Net2Brain Toolbox: Exploring the Brain with Artificial Neural Network

Invited Talks and Workshops

- **Cutting Gardens 2023**: S. Sadiya, D. Bersch, G. Roig
  Net2Brain: Unraveling cognitive functionality as captured by EEG using pre-trained artificial neural networks

- **Conference on Cognitive Computational Neuroscience 2023**: S. Sadiya, A. Gifford, M. Vilas
  Algonauts Hackathon