Amir Sadikov

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EXPERIENCE

Graduate Researcher | UC Berkeley/UCSF Bioengineering | Neural Connectivity Lab   **08/2021 – Present**
- Developed deep learning vision models for diffusion MRI denoising and super-resolution to shortens scans while improving accuracy and reliability of downstream metrics with single-subject finetuning and test-time adaptation
- Prototyped LLM-guided evolutionary program synthesis to automate the discovery of novel computational models and methods
- Devised a model-free diffusion similarity network approach to map gray matter structural organization from diffusion MRI that is sensitive to cognitive and demographic differences
- Created cortical neuromaps for and distilled current in-vivo diffusion MRI biomarkers into four interpretable factors aligned with molecular, cellular, laminar, dynamic, and functional attributes of the human brain.
- Mentored several undergraduate students toward successful conference abstracts, thesis development, and presentations
- Experience with end-to-end, reproducible research pipelines, validated across scanners/cohorts, with open-source code and models

Teaching Assistant | UCSF | Machine Learning Algorithms for Medical Imaging   **01/2025 – 04/2025**
- Formulated lesson plans, set coursework, and graded student submissions

NIH Postbaccalaureate Trainee | NIBIB | Bruce J. Tromberg Lab   **07/2020 – 08/2021**
- Developed of smartphone-based sleep apnea monitoring system
- Designed high-frequency, multi-wavelength wearable laser speckle imaging device
- Implemented of Monte Carlo trained multi-layer photon transport inverse solver

Undergraduate Researcher | Imperial College London | James E. Moore Jr. Lab   **06/2017 – 06/2020**
- First isolation, culture, maintenance, and live imaging of human lymphatic muscle cells (LMCs)
- Design and Validation of modified Diffeomorphic Demons for soft tissue mechanical assessment
- Design of pressure regulated volume control for Jamvent, an open-source, low-cost ventilator built during the Covid-19 outbreak

Intern | BIOS | Biotech Startup @ Cambridge, UK   **06/2019 – 08/2019**
- Designed user interface to aid in wireless inertial measurement unit (IMU) data collection from clinical trial participants
- Developed a deep learning pipeline for automated activity classification and fall risk assessment using IMU data

Undergraduate Researcher | Imperial College London | Neurodegenerative Diseases Lab   **10/2018 – 06/2019**
- Developed software for automated axonal tracing and morphological characterization from serial two-photon tomography

EDUCATION

University of California, Berkeley & University of California, San Francisco | PhD   **08/2021 - Present**
- Introduction to Machine Learning (UCB), Introduction to Deep Learning (UCB), Visual Neuroscience (UCB), Applications of Parallel Computers (UCB), Advanced Large Language Model Agents (UCB), Biomedical Imaging (UCB), Principles of Magnetic Resonance Imaging (UCSF), Advanced Neurological Imaging (UCSF)

Imperial College London | MEng   **10/2016 – 06/2020**

PUBLICATIONS

- Sadikov A LLM-Guided Evolutionary Program Synthesis for Quasi-Monte Carlo Design, AAAI AI2ASE workshop, 2026: Paper | Blog | Code
- Sadikov A, et al. Estimating Brain Similarity Networks with Diffusion MRI, Human Brain Mapping, 2025: Paper | Code
- Sadikov A, et al. Mapping the microstructure of human cerebral cortex in vivo with diffusion MRI, Nature Communications Biology, 2025: Paper | Blog | Code
- Sadikov A, et al. Generative AI for rapid diffusion MRI with improved image quality, reliability, and generalizability, Imaging Neuroscience, 2024: Paper | Code
- Sadikov A, et al. Validation of markerless strain-field optical tracking approach for soft tissue mechanical assessment, Journal of Biomechanics, 2021: Paper

AWARDS

- International Society of Magnetic Resonance Imaging Summa Cum Laude (Top 5% of Abstracts)   **2025**
- Imperial College London Dean's List (Top 10% of class)   **2016-2020**
- Imperial College London Best Undergraduate Poster   **2018**

SKILLS

Technical Focus: Machine Learning, Deep Learning, Computer Vision, Data Engineering, Medical Imaging
Tools: PyTorch, Cuda, OpenMP, MPI, Bash, Linux, Docker, MATLAB   Programming: Python, C/C++