

Soroosh Sanatkhani

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EDUCATION

COLUMBIA UNIVERSITY, Post doctorate, Neuroscience – Neuroimaging 2021 – Expected March 2025

- Research topic: Experimental study and computational modelling to understand the underlying mechanisms of ultrasound-induced neuromodulation in non-human primates

UNIVERSITY OF PITTSBURGH, Ph.D., Bioengineering – Bioimaging & Signals 2017 – 2021

- Received American Heart Association Predoctoral Fellowship in 2020 (scored top 10%, success rate: 22%)
- Awarded 3 distinct fellowships in cardiovascular engineering consecutively from 2017 to 2019, a Biomedical Engineering Society travel grant (2018), and a University of Pittsburgh Scholarship (2017).
- Thesis: Hemodynamic and Shape-Based Models of Left Atrial Appendage to Enhance Stroke Prediction in Atrial Fibrillation

SHARIF UNIVERSITY OF TECHNOLOGY, M.Sc., Mechanical Engineering – Energy Conversion 2013 – 2016

Top-ranked engineering university in Iran (acceptance rate of less than 5%)

- Honored with the 3rd Best Paper Award at the 2016 International Iranian Conference in Biomedical Engineering
- Thesis: Three-dimensional Simulation and Mathematical Model of Urine Concentrating Mechanism in Rat Inner Medulla

IRAN UNIVERSITY OF SCIENCE & TECHNOLOGY, B.Sc., Mechanical Engineering – Automotive 2009 – 2013

- Achieved a 1st in the first two years and 2nd in the following two years among the class of 2013
 - Thesis: Experimental and Numerical Analysis of a Passenger Car with Rear Spoiler at Different Angles of Attack
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WORK & RESEARCH EXPERIENCE

COLUMBIA UNIVERSITY, The Mortimer B. Zuckerman Mind Brain Behavior Institute New York, USA
Postdoctoral Research Scientist 2021 – Present

- Leading the design and execution of innovative biomedical experiments to uncover the mechanisms of ultrasound-induced neuromodulation and drug delivery. This aims to ensure the safe translation of scientific research into healthcare solution
- Executed a strategic development of MRI sequences protocols and introduced a quantitative image processing algorithm. This led to a significant reduction in operational time and is projected to result in annual savings of \$24,000 for the lab
- Authored in a peer-reviewed paper and refereed 2 papers for 2 journals

UNIVERSITY OF PITTSBURGH, Department of Bioengineering Pittsburgh, USA
Graduate Researcher and Predoctoral Fellow of American Heart Association (FAHA) 2017 – 2021

- Spearheaded collaboration between 2 engineering principal investigators and 2 cardiologists for dissertation work
 - Devised a predictive algorithm for stroke risk in AF patients by quantifying hemodynamic data from a 150-patient cohort. This initiative addresses a global health concern impacting 60 million people and a projected economic burden of \$36 billion
 - First authored 7 peer-reviewed papers and 1 book chapter; presented at 10 national/international conferences
 - Taught and supervised 200+ graduates and undergraduates as guest lecturer and teaching assistant in courses for Linear Systems and Electronics laboratory, Biomechanics, Quantitative Image Analysis & Visualization and Biomedical Imaging
 - Successfully secured \$140,000 in funding through fellowships for research on stroke risk assessment in atrial fibrillation
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LEADERSHIP ROLES AND ACTIVITIES

COLUMBIA UNIVERSITY ADVANCED STATISTICS CLUB
Co-organizer 2022 – 2023

- Co-led a weekly forum for peers to discuss and explore advanced Bayesian statistical concepts and applications
- Facilitated group discussions, organized lectures and contributed to a collaborative learning environment

UNIVERSITY OF PITTSBURGH BIOMEDICAL ENGINEERING SOCIETY
Chair of Academic & Professional Development 2018 – 2020

- Provided support to 30+ students preparing for Ph.D. preliminary exams by organizing review sessions and workshops
 - Led monthly student presentation breakfast club with 8+ participants
 - Directed 15 professional development workshops, dinner with industry guests and coffee chats with 7+ participants
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ADDITIONAL SKILLS

- **Languages:** English and Parsi (Persian) spoken at native/bilingual proficiency level
- **Programming:** proficient in C++, Python, MATLAB, Qt, Windows App SDK, WinUI 3, GitHub Actions (CI/CD)
- **Engineering and statistical analysis packages:** OpenFOAM, ANSYS (Workbench, SpaceClaim, Fluent, Meshing, ICEM, Mechanical), Autodesk (Fusion 360), GAMBIT, SolidWorks, CATIA, ADAMS, R, TensorFlow, SPSS and SAS, FSL, AFNI