SAMAN PARVANEH, Ph.D., M.Sc.

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Summary

Cross-functional AI leader with 15+ years in AI/ML strategy for regulated medical devices and biomedical data, including 6+ years leading teams at edwards. Expert in defining multi-year technical roadmaps and scaling high-performing teams to deliver 50+ career AI solutions that maximize clinical utility and operational efficiency. Proven success steering the entire algorithm lifecycle, from conceptual research and $600K in federal grant-funded innovation to FDA-aligned validation and global deployment. Inventor of 100+ patents/publications and a multi-year PhysioNet/Computing in Cardiology champion, recognized for pioneering advancements in cardiac monitoring and AI-driven clinical decision support.

SKILLS

- **Computer:** Matlab and Python; SQL
- **Analytical:** Signal Processing; Data Mining; Statistics; Machine Learning; Deep Learning
- **Cloud Platform:** Amazon Web Services (AWS); Snowflake
- **Leadership:** Agile Development; Business Case Development; Team Development; Cross-functional Collaboration
- **Language:** English (fluent); Persian (native)

PROFESSIONAL EXPERIENCE

Senior Director *July 2024-Present*
Director *May 2022-July 2024*
Senior Manager *Jul 2021-May 2022*
Principal Data Scientist *Jan 2020-Jul 2021*
Edwards Lifesciences, Irvine, California, USA

- Led the strategy and implementation of a Clinical Data Lake, integrating legacy data platforms into a unified architecture that reduced data access time by 50%, improved data governance, and enabled scalable analytics and AI-driven insights.
- Built and scaled an AI function delivering 40+ AI solutions and 150+ FTE-days/year in productivity gain across clinical and operational domains.
- Applied advanced predictive and generative AI to clinical trial optimization, improving speed, efficiency, and data-driven decision-making.
- Partnered with executive stakeholders to translate data assets into high-impact AI use cases across the business.
- Integrated advanced AI and generative AI into Edwards data lake, enabling scalable, governed analytics at enterprise scale.

Senior Data Scientist *Nov 2016-Jan 2020*
Philips Research North America, Cambridge, Massachusetts, USA

- Led multidisciplinary team to build clinical decision support tools (to be released in next generation of product)
- Independently and collaboratively conducted research on healthcare technology, including project management, design and execution of evaluation and exploratory studies, data analytics, and concept exploration and development for clinical analytics for acute care and aging-in-place
- Developed interpretable clinical decision support systems and predictive modeling
- Initiated new projects by securing funds through the company and external (e.g., federal grants) resources.
- Developed innovative assistive technologies using awarded grants by the United States Department of Veterans Affairs
- Mentored interns and junior data scientists

Data Scientist *Sep 2015-Nov 2016*
Philips Research North America, Cambridge, Massachusetts, USA

- Designed and developed personalized health solutions
- Developed algorithms for context-aware applications
- Evaluated and validated technologies with end-users
- Mentored interns

Clinical Scientist *Jan 2015-Sep 2015*
Philips Research North America, Rochester, Minnesota, USA

- Designed and developed predictive modeling for critical care forecasting
- Devised and implemented strategies for clinical evaluations of prototypes
- Governed research agreement process, ensured compliance, monitored project progress, and value extraction
- Interacted with clinical partners at Mayo Clinic and research teams

Postdoctoral Research Associate *Nov 2012-Dec 2014*
Department of Surgery, College of Medicine, University of Arizona, Tucson, Arizona, USA

Arizona Center on Aging, College of Medicine, University of Arizona, Tucson, Arizona, USA

- Initiated new research areas (cardiac monitoring and objective stress assessment) in a research team
- Developed biosignal processing methods and machine learning algorithms for multiple clinical applications
- Participated in the evaluation and validation of novel clinical technologies
- Engaged with industry (Covidien, BioSensics, Orpyx, and Novinoor), research foundation, and federal foundation agency to lead multiple projects and drive innovation in wearable technology in health care and fitness
- Collaborated with startups through SBIR/STTR mechanism to commercialize medical innovation
- Trained undergraduate students and supported senior engineering design teams

Faculty Member *Feb 2007 to Oct 2012*

School of Biomedical Engineering, Science and Research Branch-Azad University, Tehran, Iran

- Served as a senior lecturer and assistant professor
- Designed curriculum for Clinical Engineering program in Iran
- Lectured technology development courses (e.g., signal processing, biological system modeling, medical instrumentation, and microcontroller) to undergraduate and graduate students
- Supervised 71 undergraduate students and co-supervised two graduate students
- Designed and led workshops and training courses

EDUCATION AND TRAINING

Healthy Brain Research Network, Center for Disease Control and Prevention

Aging and Cognition Scholar *2016 to 2018*

Research Area: "Assistive Technology and Wearable Sensors for Supporting Older Adults and People with Cognition Impairment"

Department of Surgery & Arizona Center on Aging, University of Arizona, Tucson, Arizona, USA

Postdoctoral Research Associate *2012 to 2014*

Research Area: "Clinical Outcome Evaluation using Wearable Technology"

Science and Research Branch, Azad University, Tehran, Iran

- *Ph.D. in Biomedical Engineering* *2005 to 2011*
  Dissertation: "Nonlinear Dynamic Modeling of Heart Based on Poincare Section and Quantification of Treatment Process for Atrial Fibrillation."
- *M.Sc. in Biomedical Engineering* 2003 to 2005
  Thesis: "Magnetic Resonance Images Segmentation Using Entropy Method"
- *B.Sc. in Biomedical Engineering and Electrical Engineering* 1998 to 2003
  Project: "Development of Hardware for Quality Control of X-ray Tubes"

Honors and Awards

- ***Second place*** in the international annual PhysioNet/Computing in Cardiology Hackathon 2025 on "Chagas Disease Detection" (2025)
- ***Best preprint*** in the international annual PhysioNet/Computing in Cardiology Hackathon 2024 on "Digitization and Classification of ECG Images" (2024)
- ***Second place*** in the international annual PhysioNet/Computing in Cardiology Hackathon 2019 on "Early Prediction of Sepsis from Clinical Data" (2019)
- ***First prize*** in the international annual PhysioNet/Computing in Cardiology Challenge 2016 on "Classification of Normal/Abnormal Heart Sound Recordings" (2016)
- ***Granted a research fellowship*** on "Study of Cardiac Autonomic Nervous System Control across Frailty Status" by Arizona Center on Aging, College of Medicine, University of Arizona, USA-Tucson (2013)
- ***Outstanding PhD graduate***, ranked 1st in the department of Biomedical Engineering, Azad University, Iran-Tehran (2011)
- ***Ranked 1st*** among approximately 100 participants in the Azad University PhD entrance examination (2005)
- ***Outstanding MSc graduate***, ranked 1st in the department of Biomedical Engineering, Azad University, Iran-Tehran (2005)
- ***Ranked 23rd among 4000 participants*** in the nationwide graduate degree entrance examination for Medical Radiation Engineering (2004)
- ***Ranked 1st awarded paper*** in the second biomedical engineering conference in Iran-Tehran (2002)

Accomplishments

25+ pending and granted patents, 10+ invited talks, and 80+ peer reviewed publications/presentations (2320 citations, H-Index=21) in Biomedical Engineering and Data Science. The list can be provided upon request.