Saman Khazaei

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Google Scholar
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Education

- **Doctor of Philosophy in Biomedical Engineering** — New York, USA
  New York University (NYU) - Advisor: Dr. Rose T. Faghih — *Jan 2022 - May 2026 (expected)*
- **Master of Science in Electrical Engineering** — Texas, USA
  University of Houston - Advisor: Dr. Rose T. Faghih — *Sep 2019 - Dec 2021*
- **Bachelor of Science in Mechanical Engineering** — Tehran, Iran
  Sharif University of Technology — *Sep 2014 - Jul 2019*

Research Experience

- **Graduate Research Assistant** — New York, USA
  New York University. NYU Langone Health - Full time — *Jan 2022 - Present*
- **Graduate Research Assistant** — Texas, USA
  University of Houston - Full time — *Sep 2021 - Dec 2021*

Industry Experience

- **PK/PD Modeling Intern** — Massachusetts, USA
  Takeda Pharmaceutical Company - Intern — *Jun 2025 - Aug 2025*
- **Renewable Energy Intern** — Texas, USA
  National Oilwell Varco (NOV) Inc. R&D Department - Intern — *Jun 2020 - Jul 2021*

Journal Articles

- **Khazaei, S.** and Faghih, R.T., Decoding a Cognitive Performance State from Behavioral Data in the Presence of Auditory Stimuli. IEEE transactions on neural systems and rehabilitation engineering: a publication of the IEEE Engineering in Medicine and Biology Society.
- **Khazaei, S.** and Faghih, R.T., 2024. Eye tracking is more sensitive than skin conductance response in detecting mild environmental stimuli. PNAS nexus, 3(9), p.pgae370.
- Alam, S., **Khazaei, S.** and Faghih, R.T., 2024. Unveiling productivity: The interplay of cognitive arousal and expressive typing in remote work. Plos one, 19(5), p.e0300786.
- Amin, M.R., Alam, S., **Khazaei, S.**, Azgomi, H.F. and Faghih, R.T., 2024. Skin Conductance Response Artifact Reduction: Leveraging Accelerometer Noise Reference and Deep Breath Detection. IEEE Access.
- **Khazaei, S.**, Amin, M.R., Tahir, M. and Faghih, R.T., 2024. Bayesian inference of hidden cognitive performance and arousal states in presence of music. IEEE Open Journal of Engineering in Medicine and Biology.
- **Khazaei, S.**, Parshi, S., Alam, S., Amin, M.R. and Faghih, R.T., 2024. A multimodal dataset for investigating working memory in presence of music: a pilot study. Frontiers in Neuroscience, 18, p.1406814.
- Wickramasuriya, D.S., **Khazaei, S.**, Kiani, R. and Faghih, R.T., 2023. A Bayesian filtering approach for tracking sympathetic arousal and cortisol-related energy from marked point process and continuous-valued observations. IEEE Access, 11, pp.137204-137247.
- Fekri Azgomi, H., F. Branco, L.R., Amin, M.R., **Khazaei, S.** and Faghih, R.T., 2023. Regulation of brain cognitive states through auditory, gustatory, and olfactory stimulation with wearable monitoring. Scientific reports, 13(1), p.12399.

Conference Proceedings

- **Khazaei, S.** and Faghih, R.T., 2024, November. Decoding a Hidden Energy State Based on Marked Point Process Cortisol Secretory Events During Cardiac Surgery. In 2024 IEEE International Conference on E-health Networking, Application & Services (HealthCom) (pp. 1-6). IEEE.
- **Khazaei, S.** and Faghih, R.T., 2024, October. An Adaptive Marked Point Process Filtering Approach for Decoding Cognitive Performance. In 2024 58th Asilomar Conference on Signals, Systems, and Computers (pp. 950-956). IEEE
- Reddy, R., **Khazaei, S.** and Faghih, R.T., 2023, July. A Point-Process Approach for Tracking Valence using a Respiration Belt. In 2023 45th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) (pp. 1-7). IEEE.
- **Khazaei, S.**, Amin, M.R. and Faghih, R.T., 2022, October. Decoding a Neurofeedback-Modulated Performance State in Presence of a Time-Varying Process Noise Variance. In 2022 56th Asilomar Conference on Signals, Systems, and Computers (pp. 990-996). IEEE.
- **Khazaei, S.**, Amin, M.R. and Faghih, R.T., 2021, November. Decoding a neurofeedback-modulated cognitive arousal state to investigate performance regulation by the yerkes-dodson law. In 2021 43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) (pp. 6551-6557). IEEE.

Patents

- Faghih, R. and **Khazaei, S.**, New York University NYU, 2025. System and methods for estimating interoceptive awareness state using eye-tracking measurements. U.S. Patent Application 63/584,814.
- Faghih, R., Reddy, R. and **Khazaei, S.**, New York University NYU, 2025. System and method for estimating emotional valence based on measurements of respiration. U.S. Patent Application 18/778,000.

Selected Honors and Awards

- 3^{rd} **place in the 2025 NYU Tandon Research Excellence Exhibit** - Areas of Excellence *Apr 2025*
- 1^{st} **place in the 2023 NYU Tandon Research Excellence Exhibit** - Areas of Excellence *Apr 2023*
- **Dissertation Fellowship** - Department of Biomedical Engineering at the NYU *Nov 2021*

Mentorship and Teaching Experience

- **Mentoring a Master Student** New York University
  Master degree in Mathematical Sciences awarded to mentee *Spring 2025*
- **Mentor for Neural and Physiological Signal Processing Course** New York University
  Topics: modeling, theory and estimation of point processes, maximum likelihood estimation *Fall 2024*
- **Mentor for Biomedical Modeling, Estimation, & Control Course** New York University
  Topics: modeling, stability, controllability, observability, feedback control, optimal control *Spring 2024*
- **Mentoring a Master Student** New York University
  Master degree in Electrical Engineering awarded to mentee *Spring 2024*
- **Mentoring a first-year PhD Student** New York University
  Mentee was advanced to PhD candidate in Department of Biomedical Engineering *Fall 2022*

Presentations and Invited Talks

- **IEEE International Conference on e-health Networking, Applications and Services** *Nov 2024*
- **IEEE Asilomar Conference on Signals, Systems, and Computers** *Oct 2024* and *Oct 2022*
- **IEEE OJEMB Webinar on Computational Modeling & Digital Twin Technology** *Jul 2024*
- **International Conference of IEEE Engineering in Medicine & Biology Society (EMBC)** *Nov 2021*

Professional Service

- **Reviewer for IEEE Asilomar Conference on Signals, Systems, and Computers** *Apr 2025 and Jun 2024*
- **Reviewer for IEEE Transactions on Neural Systems & Rehabilitation Engineering Journal** *Apr 2025*