Arezoo Geramipour, Ph.D.

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Education

2017-2021 **Ph.D.** Biomedical Engineering, Florida International University
2013-2015 **MS.** Biomedical Engineering, Iran University of science and technology
2008-2012 **BS.** Biomedical Engineering, Amirkabir University of technology

Skills

Experienced in physiological data analysis (+10 years).

Programming and Software:

- Python (Pandas, Numpy, Matplotlib, Seaborn, scikit-learn, TensorFlow) ***5 YEARS***
- MATLAB ***10 YEARS***
- SPSS (statistics) ***3 YEARS***
- SQL ***2 YEARS***
- LabChart (Physiological data acquisition***) 5 YEARS***

Machine Learning *(5 YEARS):*

- Time Series Analysis (ARX, ARMAX)
- Neural Networks
- Linear and Logistic Regression
- Clustering and Classification

Statistics *(5 YEARS):*

- T-test (one-sample, paired)
- ANOVA (one-way, two-way, mixed)
- Confusion Matrix

Work Experience

2020-2021 **Florida international university**
National institute of Health (SPARC program)
Data Scientist

- Physiological data management and cleaning
- Modeling and simulation of physiological signals
- Data analysis and handling, data presentations

2016-2019 **Qazvin Clothing Trade Union**
Data Scientist

- Management of data related to tax, sales, size, location, etc. of clothing stores
- Modeling and analysis of tax for clothing stores

Certificates

Python for Data Science and Machine Learning Bootcamp (Udemy):
https://drive.google.com/file/d/1jiX4ezLD3QW8R-avHa5Xv-r88r5gVFPL/view?usp=sharing

Laboratory Experience

2017-2021 **Physiological signal recording**

Experienced in recording electroneurogram (ENG), electromyogram (EMG), electrocardiogram (ECG), bladder and urethral pressure in rats, *Florida International University, Academic Health Center Laboratory.*

2020-2021 **Neuromodulation (Peripheral nerve stimulation)**

Peripheral nerve stimulation (Pudendal) to restore bladder function, *Florida International University, Academic Health Center Laboratory*

2017-2021 **SOP development for Urethane (anesthetic)**

Research Experience and projects

Machine Learning projects: Modeling and Prediction

Florida International University

2019-2021 Modeled the contribution of mechanical and non-mechanical factors on urethral nerves sensitivity reduction with age (***Python: Regression, SPSS: Statistics***).

2018-2019 Modeled the degradation of bladder functionality on bladder pressure (***Python: Neural Networks and Regression, SPSS: Statistics***)

2017-2019 Developed an algorithm for automatic monitoring of post-void residual volume of the bladder (***MATLAB: Regression, MATLAB: Statistics***).

Iran University of Science and Technology (Iran Neural Technology Research Center)

2013-2015 Designed a neural network system to predict the bladder pressure using signaling of urethral afferents (***MATLAB: Time series analysis (AR), Neural Networks***).

2011-2013 Designed a fuzzy logic controller to control the blood glucose level of diabetic patients [awarded as the best BS thesis project] (***MATLAB/SIMULINK***).

Graduate Courses

- Modeling and Simulation of Biological Systems (Time-Series Analysis: ARX, ARMAX)
- Neural networks
- Pattern recognition and classification
- Biostatistics
- Physiology

Journal Papers

Geramipour A and Danziger Z. C., Age is associated with reduced urethral pressure and afferent activity in rat. *Physiological Reports*, 9 (21), 1-11, 2021.

Geramipour A and Danziger Z. C. Sensitivity of urethral flow-evoked voiding reflexes decline with age in the rat: insights into age-related underactive bladder. *American Journal of Physiology-Renal Physiology* 318 (6), F1430-F1440, 2020.

Angoli D, **Geramipour A**, Danziger Z. C. Validation of an efficient and continuous urodynamic monitoring system for awake, unrestrained, chronic rodent studies. *American Journal of Physiology-Renal Physiology*, 318 (1), F86-F95, 2019.

Geramipour A, Khazaei M, Marjaninejad A and Khazaei M. Design of FPGA-based Digital PID Controller Using Xilinx SysGen® For Regulating Blood Glucose Level of Type-I Diabetic Patients. *International Journal of Mechatronics, Electrical and Computer Technology*, 3 (7), 56-69, 2013.

Conference Papers

Geramipour A, Siu R, and Danziger Z. C. The necessity of training and collaboration in Animal studies. *9th Annual International Conference on Ethics in Biology, Engineering, & Medicine*, Florida International University, 2018.

Geramipour A, Makki S, and Erfanian A. Neural Network Based Forward Prediction of Bladder Pressure Using Pudendal Nerve Electrical Activity. *37th Annual International Conference of The IEEE Engineering in Medicine and Biology Society (EMBS)*, Milan, Italy, 2015.

Maleki A and **Geramipour A**, Continuous Control of Blood Glucose in TIDM Using Fuzzy Logic Controller in Insulin Pump: A Simulation Study. *Proceedings of IEEE international conference on control, instrumentation and automation (ICCIA)*, Shiraz, Iran, 2011.

Meetings and Presentations

Society for Neuroscience:

- **Geramipour A** and Danziger Z. C. Age-related reduction of urethral afferents sensitivity, Society for Neuroscience, Chicago, 2019.
- **Geramipour A** and Danziger Z. C. Age-related degradation of urinary tract reflexes in rat, Society for Neuroscience, San Diego, 2018.
- Angoli D, **Geramipour A**, Danziger Z. C. Novel high resolution system for continuous urodynamic monitoring of bladder function in chronic rodent studies, Society for Neuroscience, San Diego, 2018.

Society for Pelvic Research:

- **Geramipour A** and Danziger Z. C. Loss of urethral sensitivity leads to functional deficits in rat model: implications for age-related underactive bladder, The Society for Pelvic Research, 2020.
- **Geramipour A** and Danziger Z. C. Age-Related Deficits in Sensory-Mediated Reflex Bladder Control in, Society for Pelvic Research, New Orleans, 2018.

Academic Activities

2019-2021	Teaching assistant, Florida International University.
2019	Poster presentation judge: Annual Biomedical Engineering (BME) Undergraduate Research Day, Department of Biomedical Engineering, Florida International University.
2018-2019	Member of Society for Neuroscience (SFN).
2018-2019	Member of the Pelvic Research Society.
2018	Poster presentation judge: McNair Scholars Research Conference, Florida International University.
2018	Student Member of IEEE.

Honors

- Received full scholarship to study Ph.D. in Florida international university (2017-2021)
- Best poster presentation award in Pelvic Research Society conference (2020).
- Ranked 1st among MS students (2015)
- Best BS thesis award in modeling and simulation of a controller to control glucose level of diabetic patients (2012).

References

Available upon request

Work Authorization

I am authorized to work for any employer in the United States without sponsorship (pending Green Card)