

# Atiyeh Bayani

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## PERSONAL INFORMATION

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- Nationality: Iranian
- Date of Birth: 14 Feb. 1993
- Google Scholar link:  
<https://scholar.google.com/citations?user=xW7U3RUAAA&hl=en>
- ResearchGate link: <https://www.researchgate.net/profile/Atiyeh-Bayani>

## EDUCATION QUALIFICATION

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- (2017 – Present) PhD in Bioelectric Engineering, Biomedical Engineering, **Amirkabir University of Technology (Tehran Polytechnic)**, Tehran, Iran (Average Score: 18.34/20)
- (2014 – 2016) M.Sc. in Bioelectric Engineering, Biomedical Engineering, **Amirkabir University of Technology (Tehran Polytechnic)**, Tehran, Iran (Average Score: 17.97/20)
- (2010 – 2014) B.Sc. in Bioelectric Engineering, Biomedical Engineering, **Isfahan University**, Isfahan, Iran (Average Score: 17.6/20)

## HONORS AND AWARDS

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- (2019) Selected for Shahid Ahmadi Roshan Award by Iran's National Elites Foundation

- Awarded for merit-based admission<sup>1</sup> to PhD program at Biomedical Engineering Department, Amirkabir University of technology, 2014.
- Accepted for merit-based admission<sup>2</sup> to M.Sc. program at Biomedical Engineering Department, Amirkabir University of technology, 2014.
- Ranked 4<sup>th</sup> among 33 M.Sc. students of Bioelectric Engineering, Amirkabir University of Technology.
- Ranked 3<sup>th</sup> among 28 Bstudents of Bioelectric Engineering, Isfahan University.

## PUBLICATIONS

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- **Bayani, A.,** Rajagopal, K., Khalaf, A.J.M., Jafari, S., Leutcho, G.D. and Kengne, J., 2019. Dynamical analysis of a new multistable chaotic system with hidden attractor: Antimonotonicity, coexisting multiple attractors, and offset boosting. *Physics Letters A*, 383(13), pp.1450-1456.
- **Bayani, A.,** Hadaeghi, F., Jafari, S. and Murray, G., 2017. Critical slowing down as an early warning of transitions in episodes of bipolar disorder: A simulation study based on a computational model of circadian activity rhythms. *Chronobiology international*, 34(2), pp.235-245.
- **Bayani, A.,** Jafari, M.A., Rajagopal, K., Jiang, H. and Jafari, S., 2017. A novel fractional-order chaotic system with specific topology: from proposing to FPGA implementation. *The European Physical Journal Special Topics*, 226(16), pp.3729-3745.
- **Bayani, A.,** Jafari, S., Sprott, J.C. and Hatef, B., 2018. A chaotic model of migraine headache considering the dynamical transitions of this cyclic disease. *EPL (Europhysics Letters)*, 123(1), p.10006.

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<sup>1</sup> The department offers admission without the need of taking the entrance exam to distinct students in each major every year, based on students overall GPA, number of units passed, average grade in relevant courses and previous research activities.

<sup>2</sup> The department offers admission without the need of taking the entrance exam to distinct students in each major every year, based on students overall GPA, number of units passed, average grade in relevant courses and previous research activities.

- Chen, H., **Bayani, A.**, Akgul, A., Jafari, M.A., Pham, V.T., Wang, X. and Jafari, S., 2018. A flexible chaotic system with adjustable amplitude, largest Lyapunov exponent, and local Kaplan–Yorke dimension and its usage in engineering applications. *Nonlinear Dynamics*, 92(4), pp.1791-1800.
- Rajagopal, K., **Bayani, A.**, Khalaf, A.J.M., Namazi, H., Jafari, S. and Pham, V.T., 2018. A no-equilibrium memristive system with four-wing hyperchaotic attractor. *AEU-International Journal of Electronics and Communications*, 95, pp.207-215.
- Giakoumis, A., Volos, C., Khalaf, A.J.M., **Bayani, A.**, Stouboulos, I., Rajagopal, K. and Jafari, S., 2020. Analysis, synchronization and microcontroller implementation of a new quasiperiodically forced chaotic oscillator with megastability. *Iranian Journal of Science and Technology, Transactions of Electrical Engineering*, 44(1), pp.31-45.

## WORKSHOPS & COMPETITION ATTENDED

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- (2014) 21<sup>th</sup> Iranian Conference on Biomedical Engineering (as contributor), Tehran , IRAN.
- (2016) 1<sup>st</sup> International USERN Congress and USERN Prize Festival, Tehran , Iran.

## SKILLS

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### A. Computer

- Programming Language: C++, C#
- Engineering Software: Matlab, CST, SPSS, Mathematica
- General Software: Microsoft Office Package, LaTeX

## **B. Language**

- Persian: Native
- English: Fluent in Reading, Listening, and Writing

## **C. Biological Signal Processing**

## **D. Artificial Neural Networks**

# PROJECTS

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- “The influence of time delay in two coupled FitzHugh-Nagumo model (Computational model in Matlab)”, **Dynamics and Bifurcation of Nonlinear and Complex Systems**, Biomedical Engineering Department, Amirkabir University of Technology, Spring 2015.
- “The influence of oxygen dynamics in extended Hodgkin-Huxley model (Computational model in Matlab)”, **Electrophysiology**, Biomedical Engineering Department, Amirkabir University of Technology, Fall 2015.
- “The efficiency of electromagnetics methods in the treatment of migraine headache”, **Bioelectromagnetics**, Biomedical Engineering Department, Amirkabir University of Technology, Fall 2015.
- “Designing an online EEG based neurofeedback game for Attention deficit hyperactivity disorder (In C#)”, **Final project of B.Sc.**, Biomedical Engineering Department, Isfahan University, Summer 2014.

# RESEARCH INTERESTS

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- Computational Modeling
- Nonlinear Dynamics
- Chaos Theory
- Neuronal Networks

## REFERENCES

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Dr. Sajad Jafari (M.Sc. and PhD Supervisor) [sajadjafari83@gmail.com](mailto:sajadjafari83@gmail.com)

Assistant Professor, Biomedical Engineering Department, Amirkabir University of Technology