

Hossein Ghasem Damghani

🎓 M.Sc Cognitive and Clinical Neuroscience
🏛️ Maastricht University, Maastricht, Netherlands
📄 Interest: Computational Cognitive Neuroscience, Chaos and Complex Networks

CONTACT INFORMATION

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EDUCATION

- **M.Sc Cognitive and Clinical Neuroscience** at Maastricht University
- University Ranking: 233th in Total, 12nd in Netherlands (QS 2022)
- Sep 2022 - Sep 2024 (expected)
- Specialization: **Cognitive Neuroscience**

- **B.Sc Biomedical Engineering** at Amirkabir University of Technology (AUT)
- University Ranking: 465th in Total, 2nd in Iran (QS 2022)
- Sep 2017 - Feb 2022
- With focus on: **Biomedical Signal Processing and Imaging**
- Thesis: Reduction of limit on Acquired Spokes in Polar Magnetic Resonance Imaging using Neural Networks for reconstruction.
- Supervisor: Dr. Abbas Nasiraei Moghaddam
- GPA: $3.30/4 = 16.43/20$ (143 credits)
- Last Year's GPA: $3.75/4 = 18.58/20$ (24 Credits)

EXPERIENCE

Research Assistant

Center for Mathematical & Computational Biology AUT

- Sep 2021 – Present
- Working on Chaotic Systems and Early-warning Signals for Critical Transitions
- Supervisors: Dr. Fahimeh Nazarimehr and Dr. Sajad Jafari

Advanced Medical Imaging Research (AMIR Lab) AUT

- Feb 2021 – Present
- Working on Reduction of limit on Acquired Spokes in Polar Magnetic Resonance Imaging using Neural Networks for reconstruction
- Supervisor: Dr. Abbas Nasiraei Moghaddam

Teaching Assistant

Image Processing (Sep 2020 - Jul 2022)

Supervisor: Dr. Hamed Azarnoush

- Three Semesters
- Python Assignments' Designing and Grading
- Exam Designing and Grading
- Python Instructing
- Educational Material Construction

Communication Systems (Feb 2021 – Jul 2021)

Supervisor: Dr. Farnaz Ghassemi

- MATLAB Assignments' Designing
- Educational Material Construction

Internship

Tarh-e Ertebatat Consultant (TEC) (August 2021)

- Title: Python Developer
- Subject: Biomedical IC Layout Generating and Optimizing via Python (gdshelpers, fatamorgana, layout)
- Description: In this experience, I used optimizing techniques like parallel computation to decrease execution time, hard disk memory usage and RAM memory usage for a specific biomedical optical IC layout generator.

National Brain Mapping Laboratory (September 2021)

- Title: MRI Intern
- Learning About Practical Issues in MRI

Instructor

Python Programming

- Feb 2020 – Aug 2020 & Feb 2021 – May 2021 (Two times)
- Python, Scipy Packages and Tkinter
- Graded Course with Assignments and Mini-projects

Second Time: Online and Official, First Time Offline and Unofficial (Due to sudden COVID-19 Pandemic)

Article Implementation Projects

Simple chaotic 3D flows with surfaces of equilibria [with Python] (The "Chaos & Its Applications Biomed. Eng" Course)

▷ I used numpy, scipy (for ODE), matplotlib and sympy. I translated the "Lyapunov Exponent" code from a MATLAB code. The only table and three computational figures were produced in separate code. The report was in \LaTeX . In total, it earned a full score.

Removal of EEG artifacts for BCI applications using fully Bayesian tensor completion [with MATLAB] (The "Fundamentals of Digital Signal Processing" Course)

▷ I mixed two separate MATLAB code that one of them used TensorLab for Bayesian tensor completion and the other one trained a classifier algorithm (using semi-supervised transfer discriminant analysis (STDA) and Linear Discriminant Analysis (LDA)) for noise reduction efficiency evaluation. The report was in \LaTeX . In total, it earned a full score with a 10% extra score.

COMPUTER SKILLS

(LinkedIn-Assessed ones are marked with **in**)

- Python: Proficient
 - Basics Core Python(**in**), IPython (Jupyter)
 - Numerical Analysis Numpy, Scipy Library
 - Visualization Matplotlib
 - Image Processing OpenCV, Scikit-Image
 - Deep Learning Tensorflow, Keras, Pytorch
 - Others CAS: Sympy, GUI: Tkinter, IC Layout: gdshelpers, fatamorgana, layout
- MATLAB: Core MATLAB (**in**) (Proficient), Tensorlab (Introductory)
- C: Introductory
- Common Programs: \LaTeX (Proficient), MS Word, Excel (**in**), Powerpoint, EndNote, LTSpice, VS Code, etc.

CERTIFICATES

- (2021) Advanced Topics in EEG Signal Processing [SABME]
(including RQA, DFA, Fractal Dimension, Lyapunov Exponent, Entropy)
- (2021) Research Methods for Cognitive Neuroscience [SABME]
- (2020) Fundamentals of Neuroscience (X Series) [HarvardX, edX]
- (2020) Introduction to Deep Learning & Neural Networks with Keras [IBM, Coursera]
- (2020) Fundamentals of Biomedical Imaging: Magnetic Resonance Imaging (MRI) [EPFLx, edX]
- (2018) General MATLAB [SABME]

LANGUAGE

English: TOEFL: 103 (26 R, 26 L, 24 S, 27 W) Issued on 6th Nov, 2021
Persian: Native

SELECTED COURSES

- **Cognition & Brain Physiology** : A
- **Fundamentals of Image Processing** : A
- **Introduction to Computational Intelligence** : A
- **Bioelectrical Phenomena** : A
- **Chaos & Its Applications Biomed. Eng** : A
- **Fun of Radiology & Radiotherapy** : A

REFERENCES

- **Dr. Hamed Azarnoush** : Assistant Professor, BME, AUT
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- **Dr. Golnaz Baghdadi** : Ph.D., BME, AUT
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ABBREVIATIONS

- **AUT** : Amirkabir University of Technology, Tehran, Iran
- **BME** : Department of Biomedical Engineering
- **SABME** : Scientific Association of BME

i Born in August 2000, Tehran, Iran. Iranian. Love to Walk, Ride bicycles, Playing Table Tennis, Writing Short Stories, Debate and Code. For more details, consider visiting my [in](#)
Update: 16th April 2022