

Mostafa Niknami

Location: Iran, Tehran

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Education

- Ph.D. Student in Cognitive Neuroscience (Artificial Intelligence), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran.
Sep 2023 – present
- M.Sc. in Radiations Application, Sharif University of Technology, Tehran, Iran
Sep 2017 – Jan 2020
Thesis: Improvement Compton Imaging System Based on Semiconductor Detectors.
- B.Sc. in Physics, Ferdowsi University of Mashhad, Iran
Sep 2013 – Jul 2017
Thesis: Cell design for electro-optics Kerr effect

Research Interest

- Computational Cognitive Neuroscience
- Neural Network Modeling
- Simulation of Neural Circuits
- Functional MRI (fMRI)
- Compton Camera
- Positron Emission Tomography (PET)
- Radiation Dosimetry in Neuroscience



Teaching Assistance

- **Analytical Mechanics 1** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Feb 2022 – Jun 2023
- **Quantum Mechanics 1** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Feb 2022 – Jun 2023
- **Mathematical Physics 2** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Feb 2022 – Jun 2023
- **Electromagnetism 2** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Sep 2021 – Jun 2022
- **Electromagnetism 1** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Sep 2021 – Jun 2022
- **General Physics 2** For B.Sc. students at Ferdowsi University of Mashhad, *Faculty of Engineering* Sep 2021 – Jun 2022
- **General Physics 1** For B.Sc. students at Ferdowsi University of Mashhad, *Faculty of Engineering* Sep 2021 – Feb 2022
- **General Physics 4** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Feb 2021 – Jun 2021
- **General Physics 2** For B.Sc. students at Ferdowsi University of Mashhad, *Faculty of Engineering* Feb 2021 – Jun 2021
- **Electromagnetism 1** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Sep 2020 – Feb 2021
- **General Physics 1** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Chemistry* Sep 2020 – Feb 2021
- **Mathematical Physics 2** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Sep 2020 – Feb 2021
- **Mathematical Physics 1** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Feb 2020 – Feb 2021
- **General Physics 1** For B.Sc. students at Ferdowsi University of Mashhad, *Department of Physics* Feb 2020 – Jun 2020

Projects

- M.Sc. Thesis: Investigation and Simulation of Compton/Positron Emission Tomography Imaging System to Improve Image Quality.
By: Fateme Daei Ghafur Basir
Supervisor: Dr. Seyed Abolfazl Hosseini
Advisor: Mostafa Niknami
Sep 2022 – Jun 2024
- Investigation of Noise Reduction of Medical Images of Compton Camera using Wavelet Transform.
Sep 2022 – Jan 2023
- Reducing the Noise of the Images Obtained from the PET Imaging Device by using a Genetic Algorithm.
Sep 2022 – Jan 2023

Skills

- **Programming Languages:** Python, Matlab, C++, Fortran, Maple
- **Software:** Linux, MCNP (Monte Carlo N-Particle), Geant4

Articles

- Chapter Title: Compton Imaging Systems Based on CdZnTe/CdTe Detectors. 2024
Book: CdTe and CdZnTe Materials.
[Reference: Springer](#)
- Chapter Title: Compton Imaging Systems Based on Semiconductor Detectors. 2023
Book: Gamma Ray Imaging: Technology and Applications.
[Reference: Springer](#)
- Design and Simulation of a Semiconductor Detector-Based Compton Imaging System with Efficiency Analysis. 2023
[Reference: Preprint](#)

- Sensitivity analysis of the efficiency of Compton camera to the detector parameters using the GEANT4 computer code. 2021
[Reference: Applied Radiation and Isotopes](#)

Certificates

- Reviewing Radiation Physics and Chemistry (RPC) journal articles in MRI Imaging.
- Summer School, Peter the Great St.Petersburg Polytechnic University, Saint Petersburg, Russia.
- Digital Spectroscopy, Ferdowsi University of Mashhad, Iran.

Work Experience

❖ Computer hardware and network engineer

Department of Physics, Sharif University of Technology, Tehran, Iran.

- Computer software specialist
- Computer hardware specialist
- The High-Performance Computing (HPC)

Jan 2021 – Nov 2022

❖ Physics lab technician

Optics Lab, Faculty of Science, Ferdowsi University of Mashhad, Iran.

Sep 2016 – Dec 2016

Honors and awards

- Ranked 1st in my Master's program in Radiations Application at Sharif University of Technology.
- Ranked in the top 20% of my Bachelor's program in Physics at Ferdowsi University of Mashhad.
- My presentation on Compton cameras was among the best at the national conference in 2020.