Mohammad Reza FARHADINIA (M.)

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Research Interests

• Optics & Photonics • Nonlinear Optics & Photonic Integrated Circuits • Quantum Optics • Optical Neural Networks

Education

University of Tehran

M.Sc. *Student in Electrical Engineering, Major in Telecommunications - Field & Wave* *Oct. 2021 - Sep. 2024*

- **Relevant Courses:** Nonlinear Optics, Fundamentals of Photonics, Optical Fiber, Quantum Optics, Numerical Techniques in Electromagnetics, Advanced Electromagnetics
- **Thesis: Modal Analysis of Optical Integrated Waveguides in $LiNbO_3$ Technology**
- Advisors: Prof. Mahmoud Shahabadi & Prof. Jalil Rashed-Mohassel

Shahid Rajaee Teacher Training University

B.Sc. *&* **Dip.Ed.** *in Electrical Engineering, Major in Communications* *Jan. 2017 - Feb. 2021*

- **Thesis:** Plane-Wave Reflection from a Grounded Slab of Complex Media
- Advisor: Dr. Seyed Mohammad Hashemi

Research Experiences

Photonics Research Laboratory (PRL) | Research Assistant Tehran, TH

School of Electrical & Computer Eng., University of Tehran *Sep. 2022 - Present*

- Supervisor: Prof. Mahmoud Shahabadi
- Implementing the Transmission-Line Formulation (TLF) method for optical integrated waveguides.
- Surveyed the nonlinear planar optical components & nonreciprocal optical devices for PICs.

Laboratoire d'Optique et Biosciences (LOB) | Research Intern Palaiseau, Paris, France

École Polytechnique, Institute Polytechnique de Paris *Jul. 2023 - Aug. 2023*

- Supervisor: Dr. Nicolas Olivier
- Developed Lumerical material plugin for modeling coherent nonlinear microscopy based on FDTD.

Publications

Mohammad Reza Farhadinia, Josephine Morizet, Chira Stringari, Emmanuel Beaurepaire, and Nicolas Olivier; **"*Modeling Coherent Nonlinear Microscopy of Anisotropic Materials*"** (Status: In Progress)

Licenses & Certifications

Quantum Optics 2 : Two Photons & More | Coursera, Online Course	In progress
Quantum Optics 1 : Single Photons | Coursera, Online Course	In progress
Introduction to Quantum Computing for Everyone 1 | edX, Online Course	Summer 2022
Advanced Python Prog. & Object-Oriented Thinking | Quera College, Online Course	Summer 2021
AVR Microcontroller | Technical Course | Iran University of Science & Technology (IUST)	Fall 2017

Technical Skills

Programming Languages: Python, C/C++, AVR, HTML/CSS/Markdown/JavaScript, R
Specialized Softwares: Lumerical, COMSOL Multiphysics, MATLAB, CST Studio Suite, ADS
Developer Tools & Technology: LaTeX, JupyterLab, Git
Libraries: NumPy, SciPy, Matplotlib, pandas, Plotly, Strawberry Fields, Qiskit
General Softwares: Microsoft Word, PowerPoint & Excel, Adobe Illustrator, PSpice, Maple
Languages: Persian (Native), English (B2-C1), French (A1), Arabic (A2)

Other Interests

Reading Books & Scientific Magazines, Badminton, Movies & Series, Learning Languages, Traveling.