

Hamed Goli Yousefabad

Ph.D. Candidate, Graduate Research & Teaching Assistant

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[Personal Website](#)

Education

Ph.D., Physics

- University of Nevada, Reno, NV, USA
- GPA: 3.9/4

*Aug 2022-
Present*

M.Sc., Electrical Engineering (Micro- and Nanoelectronic Devices)

- University of Tabriz, Tabriz, Iran
- Thesis: “*Design, Simulation and Fabrication Feasibility of A Broadband Optical Gain Medium*”, grade: “Excellent”
- Advisor: Dr. Samiye Matloub
- GPA: 3.86/4

*Sep 2016-
Sep 2019*

B.Sc., Electrical Engineering (Telecommunications)

- Urmia University, Urmia, Iran

*Sep 2010-
Sep 2016*

Honors & Awards

- **Tuition Waived (fully-funded Ph.D. student)** based on merit and excellence, University of Nevada, Reno, NV, USA *Aug 2022-Present*
- **Ranked 4th** within all M. Sc. students majoring in Electrical Engineering (Micro- and Nanoelectronic Devices) at University of Tabriz, Tabriz, Iran *Spring 2017-Summer 2019*
- **Tuition Waived** by Urmia University based on the results of the Iranian University Entrance Exam for Bachelor’s Degree in Mathematics and Physics *Fall 2010*
- **Ranked Among Top 7%** within more than 275,000 participants in the Iranian University Entrance Exam for Bachelor’s Degree in Mathematics and Physics *Summer 2010*
- **Qualified for the 2nd stage** of National Literature Olympiad, Amir-el-Momenin State Exemplary High School, Tabriz, Iran *Fall 2007*

Research Interests

- Quantum sensing and information
- Lasers and Optical Physics
- Atomic and Molecular Physics
- Atomic magnetometry
- Matrix-isolation in cryogenic systems
- Nuclear Magnetic Resonance (NMR) spectroscopy

Publications

Journal Papers

- David M. Lancaster, Muhammad A. Shahbaz, **H. Goli Yousefabad**, Sanway Chatterjee, Eagan Ram and Jonathan D. Weinstein, “Quantum sensing in the presence of pulse errors and qubit leakage” (submitted to “arXiv” and “Quantum Science and Technology” journal), 2025 ([arXiv.org](https://arxiv.org))
- **H. Goli Yousefabad**, S. Matloub, and A. Rostami, “Ultra-broadband Optical Gain Engineering in Solution-processed QD-SOA Based on Superimposed Quantum Structure”, Scientific Reports, 2019 (nature.com)

Conference Papers & Posters

- David M. Lancaster, Sanway Chatterjee, **H. Goli Yousefabad**, and Jonathan D. Weinstein, “Quantum Sensing Using Single Atoms in Solid Neon”, 55th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP), 2024 (aps.org)

Work Experience

- **Graduate Research Assistant** *May 2023-Present*
 - University of Nevada, Reno, NV, USA
 - Prof. Jonathan D. Weinstein’s lab
 - Working on “Magnetometry, Nuclear Magnetic Resonance (NMR) spectroscopy and quantum sensing of single atoms and ensembles in solid-state cryogenic matrices with improved Signal-to-Noise Ratio (SNR) using confocal microscopy”
 - **This ongoing project is funded by NSF (Grant No.: 2412869)**
- **Lead Graduate Teaching Assistant** *Jan 2026-Present*
 - University of Nevada, Reno, NV, USA
 - PHYS 182L: Physics for Scientists and Engineers Laboratory III
- **Graduate Teaching Assistant** *Aug 2025-Dec 2025*
 - University of Nevada, Reno, NV, USA
 - PHYS 181L: Physics for Scientists and Engineers Laboratory II
- **Graduate Teaching Assistant** *Jan 2025-May 2025*
 - University of Nevada, Reno, NV, USA
 - PHYS 181L: Physics for Scientists and Engineers Laboratory II
- **Graduate Teaching Assistant** *Jan 2023-May 2023*
 - University of Nevada, Reno, NV, USA
 - PHYS 180L: Physics for Scientists and Engineers Laboratory I
- **Graduate Teaching Assistant** *Aug 2022-Dec 2022*
 - University of Nevada, Reno, NV, USA
 - PHYS 151L: General Physics Lab I
- **Freelance English Translator** *Mar 2014-Oct 2016*
 - Independent

Academic Research & Projects

- Simulation of **quantum dots, quantum wells, p-n junctions, heterostructures, transmission diagram, and solar cells** in COMSOL Multiphysics *Spring 2018*
“Simulation of Semiconductor Micro- and Nanoelectronic Devices” course
- Simulation of **rate equations, power and gain characteristics** and investigation of **size distribution effect on gain characteristics of optical amplifiers** in MATLAB *Spring 2018*
- Simulation of **rate equations, power and gain characteristics of quantum dot lasers** in MATLAB *Fall 2017*
- Simulation of **bulk and quantum dot lasers** in Silvaco TCAD *Spring 2017*
“Laser Electronics” course
- Simulation of **rate equations for bulk and quantum cascade lasers** in MATLAB *Spring 2017*
“Optical Communication Systems” course

- Simulation of **Y splitter** in Lumerical FDTD Solutions
“Optical Integrated Circuits” course *Spring 2017*
- Simulation of **graphene band structure using tight-binding model** in Matlab
“Quantum Electronics” course *Fall 2016*
- Research on **glucometers and graphene nano-biosensors**
“Biosensors” course *Fall 2016*

Presentations

- **Single-atom Magnetometry with Improved Signal-to-Noise Ratio (SNR) Using Confocal Microscopy**
Ph.D. Comprehensive Exam *Summer 2025*
- Seminar on **Quantum Dot Synthesis Methods**
“Theory and Manufacturing Technology of Solid State Devices” course *Fall 2017*
- Seminar on **Tunable Lasers**
“Optical Communication Systems” course *Spring 2016*
- Seminar on **All-optical Engineering**
“Optoelectronics” course *Fall 2016*

Selected Courses

Online Courses

- “Getting Started with Ansys Zemax OpticStudio”, (innovationspace.ansys.com)
- Instructor: Dominique Gálvez, Application Engineer II at **Ansys**, Ph.D. in Optics Sciences (in progress)
- “Quantum Detectors and Sensors”, (learning.edX.org)
- Instructor: Prof. Zubin Jacob at **Purdue University** (in progress)
- “Introduction to Python”, (datacamp.com)
- Instructor: Hugo Bowne-Anderson, Data and AI Scientist at **DataCamp** (in progress)
- “Physics of Geometrical and Physical Optics”, (coursera.org)
- Instructor: Prof. Jason Hafner at **Rice University** (in progress)
- “Creative Thinking: Techniques and Tools for Success”, (coursera.org)
- Instructor: Prof. Peter Childs at **Imperial College London** (in progress)
- “Introduction to Molecular Spectroscopy”, (coursera.org) *Mar 2024*
- Instructor: Dr. Patrick Padraig J O’Malley at **University of Manchester**

Practical Courses

- “Laser Safety Training” *June 2023*
- **University of Nevada, Reno**, NV, USA
- Instructor: Mr. Myung Chol Jo
- “Spin Coating, Electrospinning, and Magnetron Sputtering” *Fall 2018*
- **Technical and Vocational Organization (TVTO) of Iran**, Tabriz, Iran
- Instructor: Mr. Ahmad Tahmasebi

Academic Courses

- Quantum Theory II (Grade: 4/4)
- Electromagnetic Theory II (Grade: 4/4)
- Mathematical Physics (Grade: 4/4)
- Quantum Chemistry (Grade: 4/4)
- Laser Electronics (Grade: 4/4)
- Optical Integrated Circuits (Grade: 4/4)

Skills

Engineering & Data Analysis Software

- Familiar with Silvaco TCAD, COMSOL Multiphysics, and Lumerical Solutions
- Adobe Fusion 360, Igor Pro, Quartus II, HSpice, and PSpice

Programming Languages

- MATLAB
- Familiar with C, Java, and Python

General Computer Skills

- MS Office, and \LaTeX

Language Skills

- Azerbaijani: Fluent (1st language)
- Persian: Fluent (official language of Iran)
- English: Fluent
 - **Duolingo Test:** 130 (Literacy: 135, Conversation: 110, Comprehension: 130, Production: 115)
 - **GRE General Test:** (Quantitative: 156, Verbal: 144, Writing: 4)
 - **TOEFL iBT:** 98 (Reading: 22, Listening: 24, Speaking: 28, Writing: 24)
- Turkish: Familiar
- Arabic: Familiar

Workshops & Seminars

- Online workshop of “Introduction to Graphen Types, Characteristics, and Applications” *Sep 2017*
 - Online learning center of Iran Nanotechnology Initiative Council ([INIC](#))
 - Presenter: Dr. Ashkan Zolriasatein
 - (Cert. ID: 311-47790)
- “Advanced Infrared Photodetectors and Silicon Nanowire Transistors” Seminar *Jan 2018*
 - Presenter: Dr. Nima Dehdashti Akhavan (from University of Western Australia)
- Organizer of “Working with Silvaco TCAD, COMSOL Multiphysics, and Lumerical Solutions” Workshop *Dec 2017*
 - University of Tabriz
- “Introduction to CV Writing” Seminar *Nov 2017*
- “MEMS-based Silicon Photonics Universal Programmable Processors” Seminar *Sep 2017*
 - Presenter: Dr. Hamed Sattari (from École Polytechnique Fédérale de Lausanne (EPFL))
- “Organic Light Emitting Diodes (OLEDs): Challenges Toward Realizing High Brightness of OLEDs and Electrically-pumped Organic Solid State Lasers” Seminar *Aug 2017*
 - Presenter: Dr. Afshin Shahalizad (from Queen’s University)
- “Introduction to Nanotechnology and Its Applications in Electrical Engineering” Workshop *Feb 2017*
- “Nanotechnology” Seminar *Nov 2015*
 - Rab’-e Rashidi Innovation and Technology Exhibition
 - Presenter: Technical and Vocational Training Organization (TVTO) of Iran

Memberships

- Iranian Students Association (ISA) *Sep 2024-Present*
- American Physical Society (APS) *Nov 2023-Present*
- Institute of Electrical and Electronics Engineers (IEEE) *Mar 2022-Mar 2023*
- Optics and Photonics Society of Iran (OPSI) *Dec 2017-Aug 2022*

References

- **Prof. Jonathan D. Weinstein** Associate Professor at Department of Physics, JT Endowed Professor in Physics University of Nevada, Reno
(Email: jdweinstein@unr.edu , Phone: +1 (775) 784-6821)
- **Dr. Samiye Matloub** Associate Professor at Department of Electrical and Computer Engineering University of Tabriz
(Email: matloub@tabrizu.ac.ir , Phone: +98 (41) 33393789)
- **Dr. Reza Yadipour** Associate Professor at Department of Electrical and Computer Engineering University of Tabriz
(Email: r-yadipour@tabrizu.ac.ir , Phone: +98 (41) 33393730)