Nasim Bazazzadeh

Personal Data

Place and Date of Birth:	Tehran, Iran	22 December 1991
Current city:	Alpharetta, United States
Marital status:	Married, One child (born in 2017, special needs)
email:	nasim.bazazzadeh@uni-due.de

Work Experience and Education

July 2022-Now — **Postdoctoral researcher** at University of Duisburg-Essen, Duisburg, Germany

Jan 2022-Apr 2022 — **Postdoctoral researcher** at Shahid Beheshti University, Tehran, Iran

Oct 2016-Nov 2021 — **PhD in Physics** Shahid Beheshti University, Tehran, Iran
The Department of Physics at Shahid Beheshti University is one of the top five physics departments in Iran.
Grade: 18.70/20 (excellent)
Title of the thesis: Magnon-Phonon coupling in transition metal trichalcogenide monolayers

Aug 2014-Sep 2016 — **M.Sc. in Physics** Shahid Beheshti University, Tehran, Iran
Grade: 18.47/20 (excellent)
Title of the thesis: Orientation and dynamics of floating magnetic nanodiscs in dilute medium

Aug 2010-Aug 2014 — **B.Sc. in Physics** Shahid Beheshti University, Tehran, Iran
Grade: 18.00/20 (excellent).

Honors and Scholarships/Grants

2022 — Received 10,000 Euros in financial support from the Center for Nanointegration Duisburg-Essen (CENIDE)

2019-2021 — Research Assistant scholarship by Shahid Behesthi University

2016 — Cognitive sciences and technologies Council (COGC) grant

2016 — Selected as Exceptionally Talented Student at Shahid Beheshti University and Granted Straight Admission for PhD Program in Solid State Physics at Shahid Beheshti University

2016 — The first rank among 50 physics students, M.Sc. Graduation.

2014 — Selected as Exceptionally Talented Student at Shahid Beheshti University and Granted Straight Admission for Master's Program in Solid State Physics at Shahid Beheshti University

2014 — The first rank among 55 physics students, B.Sc. Graduation.

Publications

- **Nasim Bazazzadeh**, F. Maccari, B. Beckmann, O. Gutfleisch, K. Everschor-Sitte. "Using advanced latent inference methods to investigate the role of defects in magnetic al-

loys." *Conference on Artificial Intelligence in Materials Science and Engineering - AI MSE 2023.*

- **Nasim Bazazzadeh**, M. Hamdi, S. Park, A. Khavasi, A. Sadeghi, and S. M. Mohseni. "Magnetoelastic coupling enabled tunability of magnon spin current generation in 2D antiferromagnets." *Physical Review B* 104, (2021): L180402.

- **Nasim Bazazzadeh**, M. Hamdi, F. Haddadi, A. Khavasi, A. Sadeghi, and S. M. Mohseni. "Symmetry enhanced spin-Nernst effect in honeycomb antiferromagnetic transition metal trichalcogenide monolayers." *Physical Review B* 103, no. 1 (2021): 014425.

- **Nasim Bazazzadeh**, Seyed Majid Mohseni, Amin Khavasi, Mohammad Ismail Zibaii, S. M. S. Movahed, and Gholam Reza Jafari. "Dynamics of magnetic nano-flake vortices in Newtonian fluids." *Journal of Magnetism and Magnetic Materials* 419 (2016): 547-552.

- **Nasim Bazazzadeh**, F. R. Asadi, A. Khavasi, M. Mohseni and G. R. Jafari, "Brownian dynamics simulation of magnetic-vortex microdiscs," *International Conference on Nanostructures (ICSN6)*, 2016.

THEORETICAL SKILLS

Machine Learning and Computer Vision: TensorFlow, Python

- Supervised and unsupervised learning
- Neural network architectures
- UNet Architecture for image segmentation

Micromagnetic Simulation: MuMax3

- Simulation of micromagnetic phenomena.
- Magnetization dynamics and domain evolution.

Spin wave theory: SpinW, MATLAB

- Modeling and simulation of spin waves.
- Magnon band, Berry curvature, Chern number
- Quantum magnetism

Density functional theory (DFT): VASP, Quantum ESPRESSO

- SCF calculation
- Collinear/non-collinear magnetic calculation
- Ion relaxation
- Phonon band calculation

Statistical modeling: UppASD, MATLAB

- Monte Carlo simulation of atomistic spin dynamics
- Simulation of stochastic processes (Brownian motion, random walk and ...)

EXPERIMENTAL SKILLS

Transport measurements

- I-V Characterization (Two probes and four probes)

Synthesis methods

- Sputtering
- Electrodeposition

Software

- LabVIEW

Teaching Experiences

Oct 2023-Now	Teaching Assistant in Statistical Physics
Oct 2022-Jan2023	Teaching Assistant in Electrodynamics
2020-2021	Teaching Assistant in Solid State Physics
2015-2016	Teaching Assistant in Thermodynamics

Languages

English:	Advanced Knowledge
Persion:	Mothertongue

Scientific Interests

Machine learning, computer Vision, unconventional computing, data-based driven inference.

Magnetism, spintronics, magnonics, density Functional Theory, topology, Berry phases, quantum Hall effect, spin-Orbit Coupling.

References

- **Karin Everschor-Sitte** (Professor in Theoretical Physics, University of Duisburg-Essen) Email: karin.everschor-sitte@uni-due.de

- **S. Majid Mohseni** (Associated Professor at Department of physics, Shahid Beheshti University) Email: m-mohseni@sbu.ac.ir

- **Ali sadeghi** (Associated Professor at Department of physics, Shahid Beheshti University) Email: ali_sadeghi@sbu.ac.ir

- **Gholamreza Jafari** (Professor at Department of physics, Shahid Beheshti University) Email: g_jafari@sbu.ac.ir