

## Nastaran Ahanin CV

Address: Hildegard-von-Bingen-Anger Str. 25  
80937, Munich, Germany.  
Date of Birth: July 28<sup>th</sup>, 1988  
Nationality: Iranian  
Tel: (+49) 15734725062  
E-Mail: [nastaran.ahanin@lmu.de](mailto:nastaran.ahanin@lmu.de)



### Academic Qualifications

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#### Ludwig Maximilian University of Munich

PhD Candidate in Geomagnetism, Munich, Germany (Dec 2020 – Present).

My research includes fieldwork, paleomagnetic sampling, and extensive lab analyses of Ordovician sedimentary rocks to study field reversals and plate tectonic reconstruction.

#### University of Oslo

Visiting PhD student, Oslo, Norway (Nov 2023)

The Norwegian Research School DEEP awarded me full funding to attend a course on paleomagnetism and paleogeography lectured by Trond Torsvik, Annique van der Boon, and Mathew Domeier.

#### University of Tehran

M.Sc. in Geophysics in Geomagnetism, Tehran, Iran (Sep 2013 – Jun 2016).

I used a large aeromagnetic dataset of Eastern Iran to analyze and 3D model its subsurface structures and tectonic history.

#### University of Payam Noor

B.Sc. in Geology, Ahvaz, Iran (Sep 2007 – Jun 2011).

I wrote a comprehensive report on multiple fieldwork in the southern Zagros (Iran) to serve as a basis for future tectonic research.

### Professional Experience

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#### Paleomagnetic Application Specialist at Mag-Instruments UG, Munich, Germany (Feb 2023 – Present).

I am involved in testing, calibration, and writing user manuals for Paleomagnetic Lab instruments, including the Variable Field Translation Balance (VFTB), Ultra-sensitive Spinner Magnetometer (USM), and Portable Spinning Magnetometer (PSM). I also collaborated with hardware engineers in designing integrated software to operate and analyze data across all Mag-Instruments devices.

#### Junior Geophysicist at Corona Mining Zagros, Tehran, Iran (Oct 2016 – Nov 2019).

I cleaned and processed raw ground magnetic data by applying filters, corrections, and noise reduction techniques. Used Geosoft (Oasis Montaj) for data processing and analysis.

#### Student Tutoring, Tehran, Iran (Jan 2014 – Jun 2016).

I provided after-class academic support for post-secondary and college students with English. I developed a strong reputation for helping students achieve their academic goals, leading to several long-term contracts.

#### Co-Founder, Ahvaz, Iran (Jun 2010 – May 2013).

I co-founded a startup focused on developing accessories for night sky observation. I contributed to writing the business plan, securing government funding, and launching the final product. Helped establish the brand identity.

## Publications

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**Ahanin, N.**, Gilder, S. A., Sleptsova, I. V., Trepmann, C. (in prep). Hidden Permian Dykes in the Siljan Impact Structure (Sweden): Links to the NW Europe Thermal Anomaly. *Geology*.

**Ahanin, N.**, Gilder, S., Ebbestad, J.O., Roud, S., Dellefant, F., Almqvist, B., Zablotski, Y. (under review). Ordovician Reversed Superchron: Fact or Fallacy?. *Earth and Planetary Science Letters*.

**Ahanin, N.**, and Gilder, S. (2025). High-resolution tracking of Baltica's northward drift in the Ordovician, *Geophysical Research Letters*, 52 (7), e2024GL114204.

Sleptsova, I.V., Gilder, S.A., Dellefant, F., Trepmann, C.A., **Ahanin, N.** and Pohl, J. (2024). Thermal and structural history of impact ejecta deposits, Ries impact structure, Germany. *Journal of Geophysical Research: Solid Earth*, 129 (1), p. e2023JB027460.

**Ahanin, N.**, and Gilder, S. (2024). Drift of Baltica During the Ordovician: New Paleomagnetic Data from Central Sweden. *18<sup>th</sup> Castle Meeting, Utrecht, Netherlands*, Oral.

**Ahanin, N.**, Gilder, S., Ebbestad, J.O., Roud, S., and Almqvist, B. (2023). Unveiling the Ordovician Superchron and Paleogeography of the Baltica Palecontinent: New Insights from Paleomagnetic Data from Central Sweden. *AGU23 Fall Meeting, U.S.A.*, Poster.

Ebbestad, JOR., L. Wickström, **Ahanin, N.**, and Willman, S. (2023). The Ordovician of Dalarna, Sweden. *Field guide for the ISOS 14 post-conference excursion*.

**Ahanin, N.**, and Gilder, S. (2022), Preliminary Palaeomagnetic results of Late Ordovician Carbonates, South-Central Sweden. *17<sup>th</sup> Castle Meeting, Trakoscan, Croatia*, Poster.

**Ahanin, N.**, Montahaei, M., and Namaki, L. (2016), Basement study in the Lut Block, Eastern Iran, from magnetometry forward modeling. *23rd Electromagnetic Induction in the Earth Workshop, Chiang Mai, Thailand*, Poster.

**Ahanin, N.**, Namaki, L., and Montahaei, M. (2016), Qualitative interpretation of magnetic anomalies for structural analysis of Lut Block (Eastern Iran). *17<sup>th</sup> Iranian Geophysical Conference, Iran*, Oral.

## Awards & Grants

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- **Outstanding Early Career Scientist Presentation Award** at the 17<sup>th</sup> Castle meeting in Utrecht for my oral presentation titled “Drift of Baltica during the Ordovician: New Paleomagnetic Data from Central Sweden” (Jun 2024).
- Received the AGU2023 Fall Meeting **Outstanding Student Presentation Award (OSPA)** from the Geomagnetism, Paleomagnetism, and Electromagnetism section for my poster presentation titled “Unveiling the Ordovician Superchron and Paleogeography of the Baltica Palecontinent: New Insights from Paleomagnetic Data from Central Sweden” (Mar 2023).
- Granted the **DDE Paleomagnetism Working Group Award** for attending the AGU2023 Fall Meeting in San Francisco (Dec 2023).
- Awarded **Full Funding by the Norwegian Research School** for Dynamics and Evolution of Earth and Planets to participate in an intensive one-week Paleomagnetism/Paleogeography course in Oslo as a visiting PhD student (Nov 2023).
- Secured the LMU Doctoral Research Training - **Event Grant** for organizing a full-day Geophysical workshop titled "The Ambiguity of the Current Understandings in Geophysics" (Sep 2023).
- Obtained a four-year **DAAD Research Grant** – Doctoral program in Munich, Germany (Dec 2020).

## Selected Projects

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**Paleomagnetism of Rocks from Siljan Impact Structure, Sweden**, Ludwig Maximilian University, Supervisor: Prof. Gilder (2020 – Present).

**Constraining the Temperature-Pressure Conditions of Shock in the Target Rocks of the Ries Impact Structure, Germany**, Ludwig Maximilian University, Collaboration with Iuliia Sleptsova (Fall 2022).

**Using Aeromagnetic and Satellite Gravity to Unravel Tectonic History of Eastern Iran**, University of Tehran, Supervisor: Dr. Namaki (Summer 2016).

**The Role of Forward and Inverse Modeling in Geomagnetic Data Interpretation Using MATLAB**, University of Tehran: A review of different geophysical data inversion and forward modeling methods. I wrote a report of more than 12,000 words after this study. Supervisor: Dr. Mansoure Montehaei (Fall 2015).

**Implementing Local Wavenumber Methods in Interpreting Potential Field Data**, University of Tehran, Supervisor: Dr. Habibian (Summer 2015).

**Magneto-telluric Data Modeling to Identify Conductivity Structure in Suture Zones**, University of Tehran, Supervisor: Dr. Montahaei (Fall 2014).

**A Study on Different Types of Shales**, Petroleum University of Ahvaz: Identifying clay minerals in central Iran's oil reserves using laboratory methods such as XRD, XRF, and SEM. Supervisor: Dr. Ghassem Al-Askari (Winter 2010 – Spring 2011).

## Selected Fieldwork

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- **Siljan Impact Structure, Sweden (16 days)** Collected about 500 inch-core paleomagnetic samples of sediments and basement rocks to study shock and pressure conditions in the target rocks.
- **Ries Impact Structure, Germany (2 days)** Collected about 70 inch-core paleomagnetic samples of sediments and basement rocks to investigate shock and pressure conditions in the target rocks.
- **Dashte Aghili, Khuzestan, Iran (6 days)** Explored a lesser-known anticline in the Zagros Mountains. Conducted structural mapping, fossil observations, sketching, rock sampling, and prepared thin sections.
- **Shiraz, Iran (10 days)** Conducted fossil, mineral, and rock identification, and investigated main faults and major salt domes. Prepared a comprehensive report.
- **Lali, Khuzestan, Iran (1 day)** Investigated sedimentary depositional features and structures of the Asmari Formation for paleoenvironmental analysis and sedimentary modeling.
- **Hamedan, Iran (7 days)** Conducted structural mapping and interpreted igneous and metamorphic sequences. Prepared a comprehensive report.
- **Maghar, Khuzestan, Iran (1 day)** Observed basic rock types and fossils within sedimentary sequences.

## Innovations & Non-academic Achievements

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**Achieved 2nd place** in indoor rock-climbing (top rope) competition, Tehran, Iran (Jun 2010).

**Registered an astronomical invention** with the Iran Intellectual Property Center, titled “Portable Dobsonian Telescope Mount”, Tehran, Iran (Feb 2010).

**Received an award at the 9<sup>th</sup> Messier Marathon**, a night sky observing competition organized by the Astronomical Society of Iran, Khorasan, Iran (Apr 2009).

## Scientific Event Organization

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### **Full-Day Geophysics Workshop – LMU Munich** (Nov 2, 2023)

I planned and co-organized a full-day workshop for the LMU Geophysics Department, in collaboration with a fellow PhD student. We secured funding, invited three geoscientists (Douwe van Hinsbergen, Andreas Fichtner, and Juan Afonso), and hosted a highly engaging workshop for students and faculty members.

### **Three-Day Geosciences Workshop – Austria** (Oct 21 – 23, 2022)

Co-organized a multidisciplinary geosciences workshop for PhD students from LMU and TUM focused on scientific writing, communication, and interdisciplinary collaboration. Coordinated logistics, contributed to program development, and helped with securing funding. The event aimed to improve research skills and encourage early-career geoscientists' collaborations.

### **Amateur Astronomical Observations and Seminars for the Public** (Summer 2010 – Summer 2012)

I actively contributed to the amateur astronomical club of Ahvaz by organizing public astronomical events and seminars on various astronomical topics.

## Intensive courses

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**Earth Magnetism and Paleogeography**, University of Oslo, DEEP, **Visiting PhD**,  
Instructors: Prof. Trond Torsvik, Dr. Mathew Domeier, and Dr. Annique van der Boon (Oct 2023).

**Solid Earth – Fluid Earth Interactions**, University of Oslo, DEEP, **Visiting PhD**,  
Instructors: Prof. Clint Conrad, Prof. Sverre Planke, Dr. Morgan Jones, Dr. Valentina Magni, Prof. Henrik Svensen (May 2022).

**Mineralogy of Planetary Surface and Biosignature**, University of Oslo, CEED, **Visiting PhD**,  
Instructors: Prof. Stephen Mojzsis, Dr. Sandra Siljeström, Dr. Ashley King (May 2021).

**Advanced Data Interpretation and Modelling Techniques in Geomagnetism**, University of Tehran,  
Instructor: Dr. Loqman Namaki (Nov 2016).

## Skills

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### **Languages and Technical Knowledge**

Persian – native speaker  
English – business fluent (IELTS certified)  
German – conversational (B1)  
Programming language: Matlab  
Data processing software: Geosoft (Oasis Montaj)  
Graphic design software: CorelDRAW  
Microsoft Office

### **Tools/Methods**

Rock magnetic techniques (e.g., hysteresis, IRM acquisition, Th/AF demagnetization)  
Sediment sampling & processing  
Lab instrumentation (e.g., VSM, spinner magnetometers, cryogenic magnetometers)