

# Mohamad Hoseini

## Curriculum Vitae

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## Work Experience

2018–2023 **Research Assistant**, *Max Planck Institute for Informatics*, Germany.

### Tasks:

- Contributed to designing and developing a novel, large-scale data crawling system, facilitating comprehensive data collection and monitoring across multiple social media platforms including WhatsApp, Telegram, and Discord using Telegram API, Discord API, Selenium, and WebWhatsAPI.
- Crawled Twitter, Facebook, and the Web utilizing Twitter API, CrowdTangle, and Scrapy respectively.
- Employed Natural Language Processing (NLP) techniques. Used BERT and LDA for multi-lingual topic modeling to analyze text messages across 50 languages. Applied UMAP and executed clustering of the reduced embeddings using the HDBSCAN algorithm. Also, performed a similarity analysis among text messages.
- Leveraged graph analysis techniques to explore the relationships between URLs shared across various platforms. Conducted an analysis of similarities among these graphs by employing clustering algorithms. Applied community detection methods such as Louvain and graph visualization tools such as Gephi.
- Utilized data mining and machine learning methods to uncover hidden structures and trends in online misinformation dissemination.
- Performed statistical modeling and hypothesis testing and determined the optimum threshold (Krippendorff's alpha for the reliability of agreement and evaluation metrics such as Precision, Recall, and F1 score).
- Utilized different APIs to analyze big data including Virus Total URL categorization API to provide the category of URLs' domains, and Google Perspective API to determine the Toxicity Score of text messages.
- Held tutorials, co-organized courses, and advised seminars and theses.
- Provided training and mentorship to junior team members.

2012–2018 **Lecturer**, *Department of IT Engineering*, Kermanshah University of Technology, Iran.

### Tasks:

- Taught a diverse range of courses in IT Engineering and Computer Science, including Data Mining, Project Management, E-CRM, Programming, and Algorithm Design
- Mentored and guided several undergraduate thesis projects in the field of IT Engineering.
- Led and participated in multiple research projects, executing data collection, data mining analysis, and report generation.

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## Skills

**Programming Languages:** Python (NumPy, Pandas), SQL, C++

**Machine Learning:** TensorFlow, PyTorch, scikit-learn

**NLP:** BERT, LDA, Doc2vec

**Data Visualization:** Matplotlib, Gephi

**Statistical Analysis:** Hypothesis testing, regression analysis

**Cloud Computing:** Microsoft Azure

**Soft Skills:** Leadership, teamwork, excellent communication, problem-solving

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## Education

2018–2023 **PhD in Computer Science - Universität des Saarlandes, Germany.**

**Thesis Title:** Analyzing the spread of misinformation in online messaging platforms  
**Status:** In the writing phase

2009–2012 **M.Sc. in E-Commerce, Iran University of Science and Technology, Iran.**

**Thesis Title:** Investigating and Evaluating the Impact of Online Social Networks on Customers' Buying Behavior

2004–2009 **B.Sc. IT Engineering, Shiraz University of Technology, Iran.**

**Graduation project:** Sales Prediction Using Neural Networks Methods

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## Publications

- **M. Hoseini**, P. Melo, F. Benevenuto, A. Feldmann, and S. Zannettou (2023). On the globalization of the QAnon conspiracy theory through Telegram. In Proceedings of the 15th ACM Web Science Conference 2023 (pp. 75-85).
- **M. Hoseini**, P. Melo, F. Benevenuto, B. Chandrasekaran, A. Feldmann, and S. Zannettou (2020). Demystifying the Messaging Platforms' Ecosystem Through the Lens of Twitter. In Proceedings of the ACM internet measurement conference (pp. 345-359).
- **M. Hoseini**, F. Saghafi, and E. Aghayi (2019). A multidimensional model of knowledge sharing behavior in mobile social networks. *Kybernetes*, 48(5), 906-929.
- H. Sheikhi, **M. Hoseini**, M. Sabaei (2021). K-connected relay node deployment in heterogeneous wireless sensor networks. *Wireless Personal Communications*, 120, 3277-3292. Applications (PRIA). 26(1):46-54 2016.
- M. Fathian and **M. Hoseini** (2014). Investigating the Impact of Virtual Communities on Furtherance of Customers' Buying Behavior. *Journal of information technology management*, 6(3), 435-454.

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## Languages

English Professional working proficiency

Persian Native Speaker

German A1 Level

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## Residency Status

Permanent Resident (Legally allowed to work in Germany without restrictions)