

# MARYAM TAVAKOL

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## RESEARCH INTERESTS

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Reinforcement Learning and Multi-armed Bandits; Recommendation Systems; Deep Learning; Counterfactual Learning; Fairness-aware Learning; Applied Machine Learning

## EDUCATION

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**Technical University of Darmstadt**, Darmstadt, Germany  
Doctor of Philosophy in Computer Science, Machine Learning  
Thesis: “Contextual Models for Sequential Recommendation”  
September 2013 – April 2019

**University of Tehran**, Tehran, Iran  
Master of Science in Artificial Intelligence, GPA: 18.64/20 (ranked 1st)  
Thesis: “A Distributed Learning System with Multiple Reward Sources”  
September 2010 – March 2013

**University of Tehran**, Tehran, Iran  
Bachelor of Science in Computer Engineering, GPA: 17:04/20 (top 10%)  
Thesis: “Efficient Routing in Distributed Real-Time Systems”  
September 2006 – September 2010

## PROFESSIONAL EXPERIENCE

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Postdoctoral Researcher in Artificial Intelligence Group  
**Technical University of Dortmund**, Dortmund, Germany  
March 2019 – Present

Research Assistant in Machine Learning Group,  
**Leuphana University of Lüneburg**, Lüneburg, Germany  
February 2016 – February 2019

Research Assistant in Knowledge Engineering Group,  
**Technical University of Darmstadt**, Darmstadt, Germany  
November 2016 – July 2017

Research Intern in **Criteo Co.**, Paris, France  
August 2015 – January 2016

Teaching Assistant in Knowledge Mining and Assessment Group,  
**Technical University of Darmstadt**, Darmstadt, Germany  
January 2015 – April 2015

Research Assistant in Knowledge Mining and Assessment Group,  
**Technical University of Darmstadt**, Darmstadt, Germany  
September 2013 – July 2015

Junior Reasercher in **Sepanta Co.**, Tehran, Iran  
June 2012 – August 2013

## PUBLICATIONS

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1. A. Saadallah, **M. Tavakol**, and K. Morik, “An Actor-Critic Ensemble Aggregation Model for Time-Series Forecasting,” ECML 2020 (under review).
2. **M. Tavakol**, “Toward Fair Models with Counterfactual Learning,” SIGIR 2020 (under review).
3. U. Dick, **M. Tavakol**, and U. Brefeld, “Rating Actions in Spatial Multi-Agent Problems,” Machine Learning Journal (under review).
4. H. Zafar, **M. Tavakol**, and J. Lehmann, “Distantly Supervised Question Parsing,” European Conference on Artificial Intelligence, ECAI 2020.
5. **M. Tavakol**, S. Mair, and K. Morik, “HyperUCB: Hyperparameter Optimization using Contextual Bandits,” ECML Workshop on Automated Data Science, 2019.
6. **M. Tavakol**, “Contextual Models for Sequential Recommendation,” Dissertation, Technische Universität Darmstadt, 2019.
7. **M. Tavakol**, T. Joppen, U. Brefeld, and J. Fürnkranz, “Personalized Transaction Kernels for Recommendation via MCTS,” KI 2019.

8. R. Gaonkar, **M. Tavakol**, and U. Brefeld, “MDP-based Itinerary Recommendation using Geo-Tagged Social Media,” International Symposium on Intelligent Data Analysis, IDA 2018.
9. **M. Tavakol** and U. Brefeld, “A Unified Contextual Bandit Framework for Long- and Short-Term Recommendations,” Joint European Conference on Machine Learning and Knowledge Discovery in Databases, ECML 2017.
10. **M. Tavakol** and U. Brefeld, “A Preference-Based Bandit Framework for Personalized Recommendation,” DA2PL 2016.
11. **M. Tavakol**, H. Zafartavanaelmi, and U. Brefeld, “Feature Extraction and Aggregation for Predicting the Euro 2016,” Proceedings of the ECML Workshop on Sport Analysis, 2016.
12. **M. Tavakol** and U. Brefeld, “Factored MDPs for Detecting the Topic of User Sessions,” Proceedings of the ACM Conference on Recommender Systems, RecSys 2014.
13. **M. Tavakol**, M. N. Ahmadabadi, M. Mirian, and M. Asadpour, “A Distributed Q-Learning Approach for Variable Attention to Multiple Critics,” International Conference on Neural Information Processing, 2012.

## TEACHING EXPERIENCE

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1. **Technical University of Dortmund**, Dortmund, Germany
 

Lecturer in Data Mining Seminar	Spring 2020
Lecturer in Recommender Systems Seminar	Fall 2019
Teaching Assistant in Computer Vision	Spring 2019
2. **Leuphana University of Lüneburg**, Lüneburg, Germany
 

Teaching Assistant/Lecturer in Data Mining Seminar	Spring 2017, Spring 2018
Lecturer in Introduction to Python Programming	Fall 2016, Fall 2018
Teaching Assistant/Lecturer in Recommender Systems Seminar	Fall 2016, Fall 2017, Fall 2018
Teaching Assistant in Intelligent Data Analysis	Spring 2016
3. **Technical University of Darmstadt**, Darmstadt, Germany
 

Teaching Assistant in Mining Facebook	Spring 2015
Teaching Assistant in Recommender Systems Seminar	Fall 2014
4. **University of Tehran**, Tehran, Iran
 

Teaching Assistant in Advanced Robotics	Spring 2012
Teaching Assistant in Intelligent Systems	Spring 2012
Teaching Assistant in Pattern Recognition	Fall 2011, Fall 2012
Teaching Assistant in Programming Languages	Fall 2009
Teaching Assistant in Advanced programming	Spring 2008

## CERTIFICATES AND AWARDS

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1. ICML 2018 student travel award, Stockholm, July 2018.
2. Google inside look certificate, Zurich, September 2016.
3. Certificate for attending the Machine Learning summer school, Reykjavik, Iceland, May 2014.
4. PhD scholarship recipient from University of Waterloo, Canada, August 2013.
5. PhD scholarship recipient from Technical University of Darmstadt, Germany, April 2013.
6. Statement of accomplishment for online Machine Learning Course (advanced track), Stanford University, December 2011.
7. Exceptional talent certificate and admission award for master program without participating in nationwide university entrance exam, University of Tehran, Iran, September 2010.
9. Ranked top 0.07% nationwide matriculation exam - 348<sup>th</sup> among 500,000, September 2006.

## PROFESSIONAL ACTIVITIES AND SERVICES

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### Technical Program Committee:

1. International Conference on Machine Learning, ICML 2020.
2. European Conference on Machine Learning, ECML 2020.
3. European Conference on Machine Learning, ECML 2019.
4. Workshop on German Machine Learning and Data Mining, LWDA 2019.

**Peer Reviewing:**

1. International Conference on Learning Representations, ICLR 2019.
2. Neural Information Processing Systems, NIPS 2018, 2017, 2016, 2015, and 2014.
3. International Conference on Knowledge Discovery and Data Mining, KDD 2018, 2017, 2016, and 2014.
4. International Joint Conferences on Artificial Intelligence, IJCAI 2018 and 2015.
5. International Symposium on Intelligent Data Analysis, IDA 2018.
6. German Conference on Artificial Intelligence, KI 2018.
7. European Conference on Machine Learning, ECML 2017, 2016, and 2014.
8. International Conference on Machine Learning, ICML 2016.
9. Conference on Computational Natural Language Learning, CoNLL 2015.
10. International Conference on Web Search and Data Mining, WSDM 2014.

**Membership:**

Association for Computing Machinery (ACM)

**Mentorship Experience:**

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|---|---------------------------|
| 1. Alper Bate, graduate student             | Winter 2019               |
| 2. Ekaterina Dolgovykh, graduate student    | Winter 2018               |
| 3. Akath Singh Dua, undergraduate student   | Summer 2016               |
| 4. Radhika Gaonkar, undergraduate student   | Summer 2015 – Summer 2016 |
| 5. Divya Venugopalan, undergraduate student | Summer 2014               |
| 6. Qifeng Hu, undergraduate student         | Summer 2014               |
| 7. Mario Herdt, graduate student            | Winter 2013               |

**TECHNICAL SKILLS**

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<b>Programming languages</b>	Advanced in Python, C/C++, Java, C#, MATLAB
<b>Tools</b>	Tensorflow, OpenCV, Docker, mySQL, LaTeX, Git

**LANGUAGES**

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<b>Persian</b>	Native
<b>English</b>	Full professional proficiency
<b>German</b>	Average Level (A2)

**REFERENCES**

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<b>Prof. Ulf Brefeld</b>	Leuphana University of Lüneburg brefeld@leuphana.de
<b>Prof. Johannes Fürnkranz:</b>	Johannes-Kepler University Linz juffi@faw.jku.at
<b>Dr. Uwe Dick</b>	Leuphana University of Lüneburg uwe.dick@leuphana.de