MARYAM TAVAKOL

Dortmund ⋄ Germany ⋄ +49-231.755.5107 ⋄ info@maryamtavakol.com ⋄ maryamtavakol.com

RESEARCH INTERESTS

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

EDUCATION

Technical University of Darmstadt, Darmstadt, Germany
Doctor of Philosophy in Computer Science, Machine Learning, (magna cum laude) Sep. 2013 – Apr. 2019
Thesis: "Contextual Models for Sequential Recommendation"

University of Tehran, Tehran, Iran
Master of Science in Artificial Intelligence, GPA: 18.64/20 (ranked 1st) Sep. 2010 – Mar. 2013
Thesis: "A Distributed Learning System with Multiple Reward Sources"

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

PROFESSIONAL EXPERIENCE

Technical University of Dortmund, Germany–Postdoctoral Fellow Mar. 2019 – Present

- Developed state-of-the-art machine learning approaches within the context of DFG funded project on resource constraint data mining, leading to several publications.
- Supervised various PhD and master students, contributed in proposal writing, and held teaching duties.

Leuphana University of Lüneburg, Germany–Research Assistant Feb. 2016 – Feb. 2019

- Designed methods based on reinforcement learning in several application domains such as recommendation systems, sport analysis, natural language processing, etc., leading to multiple publications.
- Conducted collaborative research projects, supervised several master students, and held teaching duties.

Criteo Co., France–Research Intern Aug. 2015 – Jan. 2016

- Implemented a feature transformation technique based on gradient boosted decision trees for online ad recommendation.

Technical University of Darmstadt, Germany–Research Assistant Sep. 2013 – Jul. 2015

- Pioineered the research in the area of recommendation systems and was the first to model recommendation as a sequential problem while incorporating short-term user interests, leading to several publications.
- Maintained a close contact with Zalando company and explored different methods on their large-scale data.
- Supervised several master and bachelor students, and held teaching duties.

Sepanta Co., Iran–Software Developer Jun. 2012 – Aug. 2013

- Developed approaches based on neural network and hidden Markov models for image processing in the task of Persian OCR and license plate recognition.

PUBLICATIONS

1. A. Saadallah, **M. Tavakol**, and K. Morik, "An Actor-Critic Ensemble Aggregation Model for Time-Series Forecasting," ECML 2020 (under review).
2. U. Dick, **M. Tavakol**, and U. Brefeld, "Rating Actions in Spatial Multi-Agent Problems," Machine Learning Journal (under review).
3. **M. Tavakol**, "Toward Fair Models with Counterfactual Learning," SIGIR 2020.
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 Recommmendation 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

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

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^{th} among 500,000, September 2006.

PROFESSIONAL ACTIVITIES AND SERVICES

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:
Graduate students: Alper Bate, Ekaterina Dolgovykh, Mario Herdt
Undergraduate student: Akath Singh Dua, Radhika Gaonkar, Divya Venugopalan, Qifeng Hu

SKILLS

Programming languages	Python, C/C++, Java, C#, MATLAB
Tools	Tensorflow, OpenCV, Docker, mySQL, LaTeX, Git
Languages	Fluent in English; Elementary Proficiency in German

REFERENCES

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