Homayun Afrabandpey

Curriculum Vitae

✉ *homayun.it@gmail.com*
https://homayunafra.github.io

Positions

Nov. 2020 – **Senior machine learning researcher**, *Nokia Technologies*.

Apr.–Nov. 2020 **Postdoctoral researcher,** University of Helsinki.

Jan.–Apr. 2020 **Research Intern**, *Sony AI, Tokyo, Japan*.

Education

2015–2019 **Ph.D. candidate in Dept. of Computer Science,** School of Science, Aalto University.

Advisor: Prof. Samuel Kaski.

2012–2014 **M.Sc. in Computer Science,** Dept. of Electrical and Computer Engineering, Isfahan University of Technology.

Advisor: Dr. Mehran Safayani.

2007–2011 **BS in Information Technology (IT) Engineering,** Dept. of Electrical and Computer Engineering, Isfahan University of Technology.

Research Interests

Computer Vision **Deep Learning, Neural Network Compression**.

Machine Learning **Probabilistic Modeling, Bayesian Inference, Interpretable ML, Counterfactual Explanation**.

Human-Computer Interaction **Visual Analytics, Knowledge Elicitation**.

Publications

Journal Publications

Oct. 2020 **H. Afrabandpey**, T. Peltola, J. Piironen, A. Vehtari, S. Kaski. "A decision theoretic approach for model interpretability in bayesian framework.", *Machine Learning 109(9)*, pp. 1855-1876.

June 2019 J. S. Sartakhti, **H. Afrabandpey**, N. Ghadiri. "Fuzzy least squares twin support vector machine", *Engineering Applications of Artificial Intelligence 85*, pp. 402-409.

March 2018 I. Sundin, T. Peltola, L. Micallef, **H. Afrabandpey**, M. Soare, M. M. Majumder, P. Daee, Y. Chen, C. Heckman, G. Jaccuci, P. Martinen, S. Kaski. "Improving genomics-based predictions for precision medicine through active elicitation of expert knowledge", *Bioinformatics 34 (13)*, pp. i395-i403.

July 2017 M. Safayani, S. H. Ahmadi, **H. Afrabandpey**, A. Mirzaei. "An EM based probabilistic two-dimensional canonical correlation analysis with application in face recognition", *Applied Intelligence*, pp. 1-16.

Feb. 2016 J. S. Sartakhti, **H. Afrabandpey**, M Saraee. "Simulated annealing least squares twin support vector machine (SA-LSTSVM) for pattern classification", *Soft Computing 21 (15)*, pp. 4361-4373.

Conference Paper

April 2021 **H. Afrabandpey**, A. Muravev, H. R. Tavakoli, H. Zhang, F. Cricri, M. Gabouj, E. Aksu. "Mind the structure: adopting structural information for deep neural network compression", *International Conference on Image Processing (ICIP) 2021.*

May 2019 **H. Afrabandpey**, T. Peltola, S. Kaski. "Human-in-the-loop active covariance learning for improving predictions in small data sets", *International Joint Conference on Artificial Intelligence(IJCAI) 2019.*

July 2017 **H. Afrabandpey**, T. Peltola, S. Kaski. "Interactive prior elicitation of feature similarities for small sample size prediction", *International Conference on User Modelling, Adaptation and Personalization (UMAP)*, Bratislava, Slovakia.

March 2016 S. Virtanen, **H. Afrabandpey**, S. Kaski. "Visualizations relevant to the user by multi-view latent variable factorization", *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Shanghai, China, pp. 2464-2468.

Oct. 2014 **H. Afrabandpey**, M. Safayani. "Probabilistic two-dimensional canonical correlation analysis for face recognition", *IEEE International eConference on Computer and Knowledge Engineering (ICCKE)*, Mashhad, Iran, pp. 1-6.

Feb. 2014 **H. Afrabandpey**, M. Ghaffari, A. Mirzaei, M. Safayani. "A Novel Bat Algorithm Based on Chaos for Optimization Tasks", *IEEE Iranian Conference on Intelligent Systems (ICIS)*, Kerman, Iran, pp. 1-6.

Workshop Papers

Jun 2017 I. Sundin, T. Peltola, M. M. Majumder, P. Daee, M. Soare, **H. Afrabandpey**, C. Heckman, S. Kaski, P. Martinen. "Ask the doctor - Improving drug sensitivity predictions through active expert knowledge elicitation", 11^{th} *International Workshop on Machine Learning in Systems Biology (MLSB)*, Prague, Czech Republic.

March 2017 **H. Afrabandpey**, T. Peltola, S. Kaski. "Improving small sample size prediction by interactive prior elicitation of features pairwise similarities", *IUI Workshop on Exploratory Search and Interactive Data Analytics (ESIDA)*, Limassol, Cyprus.

Dec. 2016 **H. Afrabandpey**, T. Peltola, S. Kaski. "Regression analysis in small-n-large-p using interactive prior elicitation of features pairwise similarities", *NIPS Workshop on Future of Interactive Learning Machines*, Barcelona, Spain.

Research Services

Reviewer IEEE Transactions on Neural Network and Learning Systems.

Journal of Neural Computing and Application (Springer).

International Joint Conference on Artificial Intelligence (IJCAI) 2017.

AAAI Conference on Artificial Intelligence (AAAI) 2018.

European Conference on Machine Learning (ECML) 2021.

Organizer Machine Learning Coffee Seminar, *hiit.fi/mlseminar*.

Honors and Awards

Awarded **3K €** scholarship, Helsinki Institute for Information Technology, October 2019.

Awarded **9K €** scholarship, Finnish Foundation for Technology Promotion (Tekniikan Edistamissaatio), April 2019.

Awarded **3K €** scholarship, HPY Research Foundation, March 2019.

Awarded **15K €** scholarship, Foundation for Aalto University Science and Technology, June 2018.

Accepted for Machine Learning Summer School (MLSS'18) with travel grant, Madrid, Spain, August 2018.

Awarded **full year scholarship worth 25K €**, Finnish Academy of Science and Letters (Suomalainen Tiedeakatemia), November 2017, *acceptance rate: 8%*.

Awarded **Student Travel Scholarship**, International Conference on User Modeling, Adaptation, and Personalization (UMAP), Bratislava, Slovakia, July 2017.

Ranked 2nd among M.Sc. students of Computer Engineering (all three groups: Artificial Intelligence, Computer Architecture, and Software Engineering), Department of Electrical and Computer Engineering, Isfahan University of Technology, November 2014.

Winner of the 2nd best paper award in the local IEEE Student Paper Contest, Isfahan University of Technology, April 2013.

Teaching Experience

Spring 2018 & Spring 2019 Teaching Assistant for Machine Learning: Advanced Probabilistic Methods, School of Science, Department of Computer Science, Aalto University.

Fall 2017 Teaching Assistant for Machine Learning: Basic Principals, School of Science, Department of Computer Science, Aalto University.

Fall 2016 Teaching Assistant for Machine Learning: Basic Principals, School of Science, Department of Computer Science, Aalto University.

Spring 2013 Teaching Assistant for Artificial Intelligence, Department of Electrical and Computer Engineering, Isfahan University of Technology.

Fall 2009, Fall 2010 Teaching Assistant for Discrete Mathematics, Department of Electrical and Computer Engineering, Isfahan University of Technology.

References

Available upon request.