Mohammad K. Ebrahimpour

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Education

- **University of California, Merced** — Merced, CA
  Ph.D. in Electrical Engineering and Computer Science. — Aug. 2016 – Aug 2020
  Dissertation: Biologically Inspired Efficiencies in Computer Vision and Audition.
  Advisor: Prof. David C. Noelle.
- **Shahid Bahonar University of Kerman** — Kerman, Iran
  M.Sc. of Artificial Intelligence. — Sep. 2013 – Dec. 2015
  Thesis: Feature Subset Selection Using Hesitant and Intuitionistic Fuzzy Sets.
  Advisor: Prof. Mahdi Eftekhari.
- **Shahid Bahonar University of Kerman** — Kerman, Iran
  B.Sc. of Computer Engineering. — Sep. 2008 – Dec. 2013

Professional Positions

- **Sr. Research Scientist** — Santa Clara, CA
  Ericsson Inc. — May 2021 - Present
- **Research Scientist** — Mclean, VA
  ObjectVideo Labs - Alarm.com Inc. — June 2020 - May 2021
- **Research Scientist Intern** — San Francisco, CA
  Accenture Labs. — Aug 2019 - May 2020
- **Research Scientist Intern** — Lehi, UT
  Ancestry Inc. — May 2018 - Aug 2018

Honors and Awards

- Summer 2020: Bobcat Fellowship Award, $3000, UC Merced.
- Spring 2020: Loihi - Neural Network on the chip Fellowship Award, $13000, UC Merced.
- Fall 2019: Loihi - Neural Network on the chip Fellowship Award, $13000, UC Merced.
- Fall 2019: Dr. Donald and Effie Godbold Fellowship Award, $2000, UC Merced.
- Summar 2019: Bobcat Fellowship Award, $8000, UC Merced.
- Fall 2015: Second-ranked in the M.Sc. program (selected as the Exceptional Talents of National Universities in Iran).
- Spring 2013: First ranked in the B.Sc. program (selected as the Exceptional Talents of National Universities in Iran).

Teaching experiences

- **CSE 185 : Introduction to Computer Vision.** Merced, CA
  TA - UC Merced. Spring 2019
- **CSE 175 : Introduction to Artificial Intelligence.** Merced, CA
  TA - UC Merced. Fall 2018
- **CSE 030 : Data Structures and Algorithms.** Merced, CA
  TA - UC Merced. Fall 2017, Fall 2018, Spring 2018
- **CSE 100: Algorithms Design and Analysis.** Merced, CA
  TA - UC Merced. Fall 2016
- **Mathematical Engineering.** Kerman, Iran
  Lecturer: SBUK. Spring 2016

Publications

Preprints, software and data are available from my web page or from Google Scholar.

- **Deep Metric Learning**
  - M.K.Ebrahimpour,G.Qian, and A.Beach. "Multi-Head Deep Metric Learning Using Global and Local Representations" *In IEEE Winter Applications on Computer Vision (WACV 2022).*
- **Auditory Object Recognition**
  - M.K.Ebrahimpour,S. Schneider, D.C.Noelle, and C.T. Kello,"InfantNet: A Deep Neural Network for Analyzing Infant Vocalizations." *In submission to Interspeech 2020.*
  - M.K.Ebrahimpour, T.M.Shea, A.Danielescu, D.C.Noelle, and C.Kello, "End-to-End Auditory Object Recognition via Inception Nucleus.", *IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP 2020).*
  - M.K.Ebrahimpour, T.M.Shea, A.Danielescu, D.C.Noelle, and C.Kello, "End-to-End Auditory Object Recognition on Neuromorphic hardware chip." *Tiny ML 2020.*
- **Object Detection**
  - M.K. Ebrahimpour, J.B. Falandays, S. Spevack, M.H Yang, and D.C. Noelle, "WW-Nets: Dual Neural Networks for Object Detection." *Int. Joint Conf. on Neural Networks (IJCNN 2020).*
  - M.K. Ebrahimpour, J.B. Falandays, S. Spevack, and D.C. Noelle, "Do Humans Look Where Deep Convolutional Neural Networks 'Attend'?." *Proc. of the 41 Annual Meeting of the Cognitive Science Society (CosSci 2019).*
  - M.K. Ebrahimpour and D.C. Noelle, "Fast Object Localization via Sensitivity Analysis." *Int. Symp. on Visual Computing (ISVC 2019).*
  - M.K. Ebrahimpour, J.B. Falandays, S. Spevack, and D.C. Noelle, "Do Humans Look Where Deep Convolutional Neural Networks 'Attend'?." *Int. Symp. on Visual Computing (ISVC 2019).*
  - J.Li, M.K. Ebrahimpour, and Y.Y.Yu, "Image captioning with weakly-supervised attention penalty." *IEEE Computer Society Conf. Computer Vision and Pattern Recognition - Language & Vision Workshop (CVPRW 2019).*

- M.K. Ebrahimpour, J.Li, M.H Yang, Y.Y.Yu, J.Reese, A,Moghtaderi, and D.C. Noelle, "Ventral-Dorsal Networks: Object Detection via Selective Attention." *IEEE Winter Conf. on Applications of Computer Vision (WACV 2019).*
- M.K. Ebrahimpour and D.C. Noelle, "Weakly Supervised Object Localization via Sensitivity Analysis". *IEEE Computer Society Conf. Computer Vision and Pattern Recognition - Deep Vision Workshop (CVPRW 2018).*

- **Optimization**
  - M.K. Ebrahimpour, H.Nezamabadi-pour, and M.Eftekhari, "CCFS: A Cooperation Coevolution Techniques for Large Scale Feature Selection on Microarray Datasets.", *Computational Biology and Chemistry (CBC 2018).*

- **Dimensionality Reduction**
  - M. K. Ebrahimpour, H. Mirvaziri, and V. Sattari-Naeini, "Improving breast cancer classification by dimensional reduction on mammograms", *Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization (CMBBE 2017).*

- **Feature Selection**
  - M.K. Ebrahimpour and M. Eftekhari, "MCMR: Maximum Consistency Minimum Redundancy for Microarray High-Dimensional Feature Selection." *Pattern Recognition (PR 2017).*
  - M.K. Ebrahimpour, M. Zare, M. Eftekhari, and G. Aghamolaei, "Occam's razor in dimension reduction: using reduced row Echelon form for finding linear independent features for high dimensional feature selection.", *Engineering Applications of Artificial Intelligence (EAAI 2017).*
  - M.K. Ebrahimpour and M. Eftekhari, "Ensemble of Feature Subset Selection Methods: A Hesitant Fuzzy Set Approach." *Applied Soft Computing (ASC 2017).*
  - M.K.Ebrahimpour and M.Eftekari, "Feature Subset selection using Information Energy and correlation coefficients of hesitant fuzzy sets.", *IEEE Int. Conf. on Information and Knowledge Technology (IKT 2015).*
  - · M.K. Ebrahimpour and M. Eftekhari, "Proposing a novel feature selection algorithm based on Hesitant Fuzzy Sets and correlation concepts.", *IEEE Int. Conf. on Artificial Intelligence and Signal Processing (AISP 2015).*

- **Ensemble Learning**
  - N.A. Abolkarlou, A.A. Niknafs, and M.K. Ebrahimpour, "Ensemble Imbalanced Classification: Using data preprocessing, clustering algorithm and genetic algorithm.", *IEEE Inr. Conf. on Computer and Knowledge Engineering (CKE 2014).*
  - N.Afshari, M.K.Ebrahimpour, and A.A. Niknafs, "Improving the Ensemble classifiers based on clustering approaches and genetic algorithm.", *Int. Conf. on Information Technology and Computer (ITC 2014).*

- **Ontology Mapping**
  - I.Badrooh, M.K. Ebrahimpour, and R.Beheshtinezhad, "Utilizing an Optimization Method for Map Extraction on Ontology Alignments", *IEEE Int. Conf. on Electrical Engineering (ICEE 2010).*

Intellectual Properties

- M.K. Ebrahimpour,., Y.Y Yu,J. Li, ,J. Reese, and A. Moghtaderi, "Ventral-Dorsal Neural Networks: Object Detection via Selective Attention". *U.S. Patent Application 16/573,180 (2020).*
- J. Li, M.K. Ebrahimpour, A. Moghtaderi, and Y.Y Yu, "Captioning with Weakly-Supervised Attention Penalty". *U.S. Patent Application 16/596,063 (2020).*

Invited Talks and Lectures

- **Guest Lecturer at Introduction to Cognitive Science course, UC Merced.** CA, USA
  Subject: Introduction to Artificial Intelligence. Summer 2020
- **Accenture Labs.** CA, USA
  Subject: Object Detection with Selective Attention. Fall 2019
- **Guest Lecturer at Introduction to Artificial Intelligence course, UC Merced.** CA, USA
  Subject: Introduction to Computer Vision. Fall 2018
- **Dept. of Applied Mathematics, UC Merced.** CA, USA
  Subject: Object Detection with Sensitivity Analysis. Fall 2018
- **Ancestry Inc.** Lehi, UT
  Subject: What is wrong with current object detectors? Summar 2018
- **Guest Lecturer at Statistical Pattern Recognition course, SBUK.** Kerman, Iran
  Subject: Introduction to Deep Learning. Fall 2017

Professional Services

- Reviewer for the following conferences and journals:
  - Neural Information Processing Systems (NeurIPS).
  - Int. Conf. on Machine Learning (ICML).
  - IEEE Computer Society Conf. Computer Vision and Pattern Recognition (CVPR).
  - IEEE Computer Society Conf. on Winter Applications on Computer Vision (WACV).
  - IEEE Int. Conf. Acoustics, Speech, and Signal Possessing (ICASSP).
  - Cognitive System Research (CSR)
  - Engineering Applications of Artificial Intelligence (EAAI).
- Served on Graduate Dean's Advisory Council on Diversity for the Academic Year 2018-2019.