

RESEARCH  
INTEREST

Computer Vision, Machine Learning, Deep Learning, Vision and Language.

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## EDUCATION

**Computer Science Ph.D. Fellow in Computer Vision**

*Boston University, Boston, MA, USA.*

*Adviser: Professor [Margrit Betke](#)*

*GPI: 3.84 out of 4*

*September 2017-now*

**Double Major M.Sc. in Computer Sciences and Electrical Engineering**

*University of Wisconsin-Madison, Madison, WI, USA.*

*CS GPA: 3.62, CGPA of both degrees: 3.49 out of 4*

*CS Master's Graduation: May 15th 2016, EE Master's Graduation: August 24th 2014*

**M.Sc. in Computer Engineering Majored in Computer Architecture**

*Sharif University of Technology, Tehran, Iran.*

*CGPA: 17.71 out of 20*

**B.Sc. in Computer Engineering Majored in Computer Hardware**

*Shahid Beheshti University, Tehran, Iran.*

*CGPA: 15.32 out of 20*

*Second best hardware engineering student in batch of 2009 graduates*

**National Organization for Development of Exceptional Talents**

*Karaj, Tehran, Iran*

*Designated for top 5% of the entire high school students in Iran*

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## EXPERIENCE

**Research Intern**

*[NVIDIA Research](#), North Carolina, Durham*

*Mentor: Dr. [Josef Spjut](#), collaborator: [Ben Boudaoud](#), Manager: Dr. [David Luebke](#)*

*June 20-August 31, 2018*

**R&D Engineer 1**

*[Center for Augmented Cognition](#), University of California, Berkeley*

*Under supervision of Dr. [Allen Y. Yang](#) and mentorship of [Joseph Menke](#)*

*May 1-August 15, 2017*

**Research Intern**

*Computer Vision Group, Medical Sciences Center, University of Wisconsin-Madison*

*Under supervision of Professor [Vikas Singh](#) and mentorship of Professor [Won Hwa Kim](#)*

*August 1, 2016-May 1, 2017*

**Graduate Research Assistant**

*[Internet of Things Lab](#), University of Wisconsin-Madison*

*Under supervision of Dr. [Thomas Yen](#), Professor [Raj Veeramani](#) and [Alfonso Gutierrez](#)*

*May 15, 2015-May 15, 2016*

**Mathematics and Science Lead**, Program Assistant for [PEOPEL](#) program in [East High School](#),

Coordinator: Paul Ly Tong Pao, Spring and Fall 2014, Spring 2015.

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## PUBLICATION

Anonymous Submission to Journal of Computer Vision and Image Understanding – in preparation

Anonymous Submission to Association for Computational Linguistics (ACL) 2019

Anonymous Submission to Artificial Intelligence in Education (AIED) Conference 2019

Anonymous Submission to “Journalism & Mass Communication Quarterly” (JMCQ) 2019–Top Journal in Communications and Media Studies

[SAVOIAS](#): A Diverse, Multi-Category Visual Complexity Dataset, ArXiv preprint 2018.

M. Jalal, K. K. Mays, L. Guo, M. Betke, Performance Comparison of Crowdworkers and NLP Tools on Named-Entity Recognition and Sentiment Analysis of Political Tweets, 2nd [Widening Natural Language Processing](#) (WiNLP) workshop at North American Chapter of the Association for Computational Linguistics (NAACL) 2018 conference, 4 pages, New Orleans, LA, 2018.

W. Kim, M. Jalal, S. J. Hwang, S. C. Johnson, V. Singh, [Online Graph Completion: Multivariate Signal Recovery in Computer Vision](#), 2017 IEEE Conference on Computer Vision and Pattern Recognition, CVPR, Honolulu, HI, USA, pages 5019–5027, July 21–26, 2017 [acceptance rate: 29.9%].

A. Kumar, M. Jalal, B. Yan, J. F. Naughton, J. M. Patel: [Demonstration of Santoku: Optimizing Machine Learning over Normalized Data](#). Proceedings of Very Large Data Bases (PVLDB) 8(12): pages 1864–1867, 2015 [acceptance rate: 33.1%].

M. Jalal, Z. Shirmohammadi, A. Patooghy, S. G. Miremadi, [Evaluation of Application Mapping for Network-on-Chips](#), Real-time and Embedded Systems (RTES’10), 6 pages, 2010.

Z. Shirmohammadi, M. Jalal, A. Patooghy, S. G. Miremadi, [A Reconfigurable Switch Architecture to Enhance Reliability of Network-on-Chips](#), Real-time and Embedded Systems (RTES’10), 7 pages, 2010.

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## HONOR & AWARD

[Brilliant BUD Awardee](#), this distinction enabled me to be a distinguished presenter at the 4th Annual BU Data Science (BUDS) Day poster session and present our research/project during the Student Lightning talk portion of the program. The Brilliant BUD Award recognizes outstanding students who have showed dedication to their studies and have shown in-depth knowledge of their research. The recognition comes from a nomination, in my case from Professor Stan Sclaroff.

Selected for an [interview](#) for [RSIP Women in Computer Vision](#), April 2018.

Quora [Top Writer 2018](#), March 15, 2018.

Travel grant for 2nd Widening NLP (WiNLP), June 1, 2018 at NAACL 2018, New Orleans, LA.

[SciPy18 Top Reviewer](#), March 3rd, 2018.

Travel grant for Fairness, Accountability, and Transparency ([FAT\\*](#)) conference, February 2, 2018.

[Full Gold scholarship](#) to [ODSC](#) (Open Data Science Conference) East 2018, January 29, 2018.

[5-year fellowship](#) for Computer Sciences PhD studies, Boston University, Boston, February 1, 2017.

Chef [diversity scholarship](#) for attending [ChefConf16](#).

Twitter Inc. and Bloomberg Inc. grant for Site Reliability Engineering Conference [SREcon16](#).

Travel scholarship for [CRA-W](#) Graduate Cohort Workshop, Spring 2013 and 2016.

[Golden Brick](#) honor for unsung but critical tasks in representing WACM, University of Wisconsin-Madison CS department, Madison, WI, May 4, 2016.

Google scholarship for attending [Google UBIQUITY](#): Beyond the Internet of Things, January 2016.

Google Anita Borg Institute (ABI) [scholarship](#) for Grace Hopper Celebration ([GHC](#)) 2015.

[Major League Hacking](#) travel scholarship for [mHacks6](#).

Google travel scholarship for attending [VLDB15](#).

Texas Advanced Computing Center ([TACC](#)) scholarship for [supercomputing summer institute](#), 2015.

Full CS departmental funding for attending Grace Hopper Celebration ([GHC](#)) 2014.

[TACC](#) scholarship for attending [IEEE BigData 2014](#) conference and first hands-on workshop on leveraging high-performance computing resources for managing large datasets.

Apple Inc. scholarship for attending Grace Hopper Celebration ([GHC](#)) 2013.

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## ACADEMIC PROJECT

Survey on visual question answering and reasoning. [Vision and Language](#), Fall 2018.

Improving real-estate price predictions with images. [Deep Learning](#), Fall 2018

Supporting Intel RealSense 3D SR300 camera for Open Augmented Reality Kit ([OpenARK](#)) as well as building a [test framework](#) for the OpenARK. [Computer Vision](#), Summer 2017

Integrated smart home automation using Open Home Automation Bus ([OpenHAB](#)) platform. [Internet-of-Things](#), [Home Automation](#), Fall 2015-Spring2016

Performance tuning in Hive/MR, Hive/Tez, Apache Storm and Apache Spark. [Big Data](#), Fall 2015

Toyota driving automation natural user interface using Intel RealSense 3D camera. [Computer Vision](#), [Human-Machine Interaction](#), Summer 2015

JPEG image compression, spectral correlation, IIR and FIR filter design with application in ECG, MinMax equalizer, windowing using MATLAB and a survey on image segmentation using spectral clustering. [Image Processing](#), [Computer Vision](#), Spring 2014

Survey on community mining in social networks. [Information Retrieval](#), [Machine Learning](#), Fall 2013

Implemented command line interpreter (Shell), memory management module, kernel threads in Linux environment and modified xv6 simulator to support multi-thread, and lottery scheduling. [Operating Systems](#), [Kernel Hacking](#), Fall 2013

Survey on creating accelerator for GPU and converting/annotating C benchmarks to CUDA-C. [GPU](#), [Computer Architecture](#), Spring-Summer 2013

DySER, use of accelerators beside OpenSparcT1, on VIRTEX 7. [FPGA](#), Fall 2012

Exploiting heterogeneity in Amazon EC2 cloud for better pricing and better availability using CloudMeter simulator. [Cloud Computing](#), Fall 2012

Design of a fully 5-stage pipelined MIPS processor with 2-way set associative cache using Verilog & synthesized with Design Compiler. [Computer Architecture](#), Spring 2012

A Survey on near-duplicate video detection methods using YouTube API, Google App Engine, Hadoop, and Condor. [Information Retrieval](#), [Computer Vision](#), Winter 2011

Programming a robot arm for automated Arabidopsis Photography in Study of Roots using Visual C++. [Computer Vision](#), Fall 2011

Designing and maintaining the UW-Madison Persepolis research group Website via Joomla CMS and customized HTML/CSS/jQuery. [Web Development](#), Summer-Fall 2011

Hardware implementation of a fast improved decimal multiplier using VHDL. [Computer Architecture](#), [Computer Arithmetic](#), Summer 2009.

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## TEACHING/LAB ASSISTANT

**Introduction to Computer Science (CS101)**, Instructor: Perry Donham, Department of Computer Science, Boston University, Spring 2019.

**Student coach** for the basic track of [Data+Narrative](#) intensive course at the BU College of Communications, supervised by Professor [Maggie Mulvihill](#), June 1-4, 2018.

**Introduction to Database Systems (CS460/660)**, Instructor: Dr. George Kollios, Department of Computer science, Boston University, Fall 2017. (79 students)

[Internet-of-Things](#) lab, supervised by Dr. Raj Veeramani, Thomas Yen, Alfonso gutierrez, Designed tutorials and have worked with Microsoft Band, Pebble Smart Watch, CrazyFlie nanocopter, Parrot AR Drone 2 with Myo armband/Leap Motion, Intel Galileo Gen1 board, Arduino Yun board, Raspberry Pi 2, as well as working with IoT platforms like ThingWorx, IBM Watson, IBM BlueMix, AWS IoT, from May 2015 to May 2016.

**Calculus and Analytic Geometry 1 (Math221)**, Instructor: Dr. Gloria Mari-Beffa and Dr. Ruifang Song, Department of Mathematics, University of Wisconsin-Madison, Fall 2013.

**Introduction to Computer Engineering (CS252)**, Instructor: Dr. Guri Sohi and Dr. Mark Hill, ECE/CS Department, University of Wisconsin-Madison, Spring 2013.

**Introduction to Computer Architecture (ECE/CS552)**, Instructor: Dr. Yu Hen Hu, ECE/CS Department, University of Wisconsin-Madison, Fall 2012.

**Advanced Electronic Circuits (ECE342)**, Instructor: Dr. Giri Vekataramanan, ECE Department, University of Wisconsin-Madison, Fall 2012.

**Nephrotex Virtual Internship for Freshman Engineering Students (InterEng101)**, Supervisor: Dr. Golnaz Arastoopour, University of Wisconsin-Madison, Fall 2012.

**Embedded System Design**, Instructor: Dr. Alireza Ejlali, Computer Engineering Department, Sharif University of Technology, Spring 2011.

**VLSI Design**, Instructor: Dr. Mehdi Modarresi, Computer Engineering Department, Sharif

## INSTRUCTOR

**Seeing through Engineer's Eyes**, 3-week intensive workshop for middle school students, University of Wisconsin-Madison, Madison, WI, Summer 2012.

**Network Laboratory**, Computer Engineering Department, Sharif University of Technology, Spring 2011.

**Digital Design Laboratory (using Verilog HDL and implementing on Altera and Xilinx FPGAs)**, Computer Engineering Department, Sharif University of Technology, Fall 2010.

**Network Laboratory (CCNA-based, Using Packet Tracer)**, Electrical and Computer Engineering Department, Shahid Beheshti University, Fall 2009.

## PROFESSIONAL SERVICE

Nominated to serve as Program Chair of ACL Student Research Workshop (SRW) 2019 to review 2-3 papers and advertise for the workshop.

PhD Student Representative for Boston University CS Department, FY 2018-2019.

**Workshop Designer**, ICA Preconference: **Crowdsourcing as a Content Analysis Tool**, May 2018.

Program committee (PC) member for **SciPy 2018**.

**Mentoring Chair** for women in computer science (WACM) in computer sciences Department of University of Wisconsin-Madison, September 2015-May 2016.

Activity chair for WACM, September 2013-September 2015.

Social chair for student chapter of ACM (SACM) in computer sciences department of University of Wisconsin-Madison, August 2014-August 2015.

Volunteer mentor for Internet-of-Things MOOC Course-Kings College London, led by Professor Mischa Dohler, November 2015-December 2015.

Linux Instructor and volunteer for basic and intermediate levels representing WACM, Department of computer sciences, University of Wisconsin-Madison, Spring and Fall 2016.

## MEMBERSHIP

**Graduate Women in Science and Engineering (GWISE)**, December 2018-now

**Association for Computational Linguistics (ACL)**, 2018-now

**Systems**, 2013-now

**Widening the Natural Language Profession (WiNLP)**, 2018-now

**Women in Machine Learning (WiML)**, 2017-now

**Computer Vision Foundation (CVF)**, 2017-now

University of Wisconsin-Madison Women in CS (WACM), 2012-2017.

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## SKILLSET

**Programming Languages:** Python, Java, R, C, Visual C#.net, C++.

**Deep Learning Framework:** PyTorch (using frequently), Tensorflow/Keras (using if needed).

**Web Development:** HTML5, CSS3, Twitter Bootstrap, Joomla! CMS, jQuery.

**Operating Systems:** OSX, Linux (Ubuntu, Raspbian, CentOS & Redhat) and Microsoft Windows 7, 8.1/10 (Enterprise Edition).

**Others:** Faster-RCNN, SSD(Single Shot Detector), YOLO(You Only Look Once), JavaScript, Node.js, Shiny API, NLTK, JSON, MPI, MATLAB, Twitter API, Instagram API, HTCondor, YouTube Python API, Google Visualization API, bash scripting, LaTeX, git, Apache Spark, Cloudlab, Visual C++.net, X86 Assembly, Postgresql, Verilog, VHDL, CUDA-C, Altera Quartus, Xilinx ISE, GPGPU-Sim, CUDA Toolkit, Gem5-GPU, TextBlob, Wireshark, Docker, AWS-EC2, Scrapy, Gensim, Jupyter, PHP, Google Cloud Natural Language, Keras, OpenCV, OpenFace, Amazon Mechanical Turk, and Figure8, Tweepy, MongoDB, OpenPose.

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## RESEARCH TALK

**Automatic Facial Expression Analysis Goes to School**, BU Artificial Intelligence Research (AIR) seminar series, February 25, 2018.

**Creating Synthetic Data for Deep Learning Applications** at [Machine Intelligence Conference](#) at MIT Media Lab, November 3, 2018.

**Emotion Recognition**, Boston University Artificial Intelligence Winter Retreat, January 11, 2018.

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## POSTER

**Student Outcome Prediction on an Intelligent Tutoring System**, Boston University Data Science Day (BUDS), February 6, 2019.

**Large-scale Synthetic Domain-Randomized 6DoF Object Pose Estimation Dataset**, [New England Computer Vision Workshop](#), November 26, 2018.

**Large-scale Synthetic Domain Randomized 6DoF Object Pose Estimation Dataset for Deep Learning Applications**, [OpenAIR Day](#), October 12, 2018.

**Pedestrian Dataset Creation using Video Games**, Presented as a poster at American Family Insurance 2nd Annual Analytical Forum, April 18, 2017.

**Biological Complexity in Systems Biology of Circadian Clocks**, A. Sangari, M. Khabbazian, M. Jalal, M. Arabgol, A. H. Assadi, Presented as a poster at 2011 [Midwest Eye Research Symposium](#).

**High-throughput Data Collection and Automated Imaging**, A. Sangari, M. Jalal, H. Ardalani, E.S. Selen, H.T. Dashti, M. Mahdavi, A. H. Assadi, Annual Eye Research Institute Vision Science/Visual Art Poster and Gallery Session, October 2011.

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## MENTORSHIP

Kaihong Wang, on Instagram data mining for finding unhealthy food patterns in developing countries using computer vision and natural language toolsets, February 2019-now.

[Boqi Chen](#), on News mining from News URL using [newspaper3k API](#) for international news and near-duplicate image detection using deep neural networks, November 2018-now.

Wenjun Zhu, on [emotion recognition](#) and [Twitter data mining](#) using [Tweepy](#), October-December 2018.

Hellaine Hall and Varsha Achar to get started on their American Sign Language (ASL) project for AI4ALL summer outreach program at Boston University, June 2018.

Sha Lai, on using crowdsourcing systems ([Figure-Eight](#) and [Amazon Mechanical Turk](#)) for creating datasets and analyzing data, Spring 2018.

Min Zhou and Sherwin Lee, on body pose estimation using [machine learning](#) and [deep learning](#) methods, Spring 2018.

Davide Lucci and Silvia Ionescu, on emotion recognition using facial action units and facial landmarks of United States presidential debate using both SVM and CNN, Fall 2017.

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## LANGUAGE

**Farsi**, **English**: professional proficiency, **French**: intermediate, **Italian**: basic, **Arabic**: basic.

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## REFERENCES

Professor [Margrit Betke](#), 111 Cummington Mall, Rm MCS 286, Boston, MA 02215

Professor [Derry Wijaya](#), 111 Cummington Mall, Rm MCS 294 A, Boston, MA 02215

Dr. [Allen Y. Yang](#), Rm 337, Cory Hall, Berkeley, CA 94720

Professor [Jeffrey Naughton](#), Google Building 10, 10 N Livingston St, Madison, WI 53703