Mona Jalal   monajalal.com   jalal@bu.edu

RESEARCH INTERESTS

Computer Vision, Machine Learning, Deep Learning, Data Science, Information Retrieval.

EDUCATION

Computer Science M.Sc. in Computer Vision
Boston University (BU), Boston, MA, USA.
Projects: "3D Human's Shape, Mesh, and Modeling with Applications" &
"Efficient Deep Learning for Digital Pathology Images"
GPI: 3.85/4

Double Major M.Sc. in Computer Sciences and Electrical Engineering
University of Wisconsin-Madison (UW), Madison, WI, USA.

M.Sc. in Computer Engineering Majored in Computer Architecture
Sharif University of Technology (SUT)–Ranked 1st in Iran

B.Sc. in Computer Engineering Majored in Computer Hardware
Shahid Beheshti University (SBU)–Ranked 5th in Iran.

EXPERIENCES

Computer Vision Research Intern at *DawnLight Technologies Inc.*, *3D pose estimation for activity understanding* and *3D human-object interaction reconstruction from single image*

Machine Learning Engineering Intern at *Twitter Cortex*, *Hateful conduct detection in tweets*

Research Intern at *NVIDIA Research*, *3D object pose dataset creation using Unreal Engine 4*

R&D Engineer 1 at *Center for Augmented Cognition*, University of California, Berkeley, *3D egocentric hand pose estimation*

Research Intern at *Computer Vision Group, Medical Sciences Center, University of Wisconsin-Madison, Graph signal recovery and playing video games for dataset creation*

Graduate Research Assistant at *Internet of Things Lab, University of Wisconsin-Madison, Integrated smart home automation using OpenHAB platform*

SKILLS

Programming Languages: Python 3, Java, R, C, Visual C#.net, Visual C++.

Deep Learning: 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).

APIs: Google Cloud Natural Language, Google Cloud Vision, Google Visualization, Twitter, Instagram, YouTube.

Computer Vision: OpenPose, OpenFace, OpenCV, Faster-RCNN, Single Shot Detector (SSD), You Only Look Once (YOLO)

Hardware: Verilog, VHDL, CUDA-C, Altera Quartus, XilinX ISE, GPGPU-Sim, CUDA Toolkit, Gem5-GPU, X86 Assembly, Arduino Yun, Raspberry Pi

Also familiar with: Crowdsourcing (Amazon Mechanical Turk/Figure-Eight), MPI, MATLAB, HTCondor, bash scripting, LaTeX, git, Apache Spark, Cloudlab, Wireshark, Docker, AWS-EC2, Scrapy, Gensim, Jupyter, PHP, Tweepy, MongoDB, Postgresql, JavaScript, Node.js, JSON, Shiny package, NLTK, TextBlob, Gensim, Scala, and Scalding.

PUBLICATIONS & REPORTS

N. Ruiz, H. Yu, D. A. Allessio, **M. Jalal**, A. Joshi, T. Murray, J. J. Magee, J. R. Whitehill, V. Ablavsky, I. Arroyo, B. P. Woolf, S. Sclaroff, and M. Betke, Leveraging Affect Transfer Learning for Behavior Prediction in an Intelligent Tutoring System, IEEE International Conference on Automatic Face and Gesture Recognition, 2021.

V. Bhatia, V. P. Akavoor, S. Paik, L. Guo, **M. Jalal**, A. Smith, D. A. Tofu, E. E. Halim, Y. Sun, M. Betke, P. Ishwar, D. T. Wijaya, OpenFraming: Open-sourced Tool for Computational Framing Analysis of Multilingual Data, Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP): System Demonstrations, 2021.

I. Tourni, L. Guo, T. H. Daryanto, F. Zhafransyah, E. E. Halim, **M. Jalal**, B. Chen, S. Lai, H. Hu, M. Betke, P. Ishwar, D. T. Wijaya, Detecting Frames in News Headlines and Lead Images in US Gun Violence Coverage, Detecting Frames in News Headlines and Lead Images in US Gun Violence Coverage, Findings of the Association for Computational Linguistics: Conference on Empirical Methods in Natural Language Processing (EMNLP), 2021.

N. Ruiz, **M. Jalal**, V. Ablavsky, D. Allessio, J. Magee, J. Whitehill, I. Arroyo, B. Woolf, S. Sclaroff, M. Betke, Leveraging Affect Transfer Learning for Behavior Prediction in an Intelligent Tutoring System, Technical record

$A.Smith^*, D.A.Tofu^*,$ **M. Jalal***, E. E. Halim, Y. Sun, V. Akavoor, M. Betke, P. Ishwar, L. Guo, and D. T. Wijaya, OpenFraming: We brought the ML; you bring the data. Interact with your data and discover its frames. arXiv link.

E. Saraee, **M. Jalal**, M. Betke, Visual Complexity Analysis using Deep Intermediate-Layer Features, Accepted at the Computer Vision and Image Understanding Journal 2020.

M. Jalal$^*, K.Wang^*$, J. Sankara, Y. Zheng, E. O. Nsoesie, M. Betke, Scraping Social Media Photos Posted in Kenya and Elsewhere to Detect and Analyze Food Types, ACM Multimedia, 5th International Workshop on Multimedia Assisted Dietary Management (MADiMa), 2019.

L. Guo, K. Mays, S. Lai, **M. Jalal**, P. Ishwar, M. Betke, Accurate, Fast, But Not Always Cheap: Evaluating "Crowdcoding" as an Alternative Approach to Analyze Social Media Data, accepted to "Journalism & Mass Communication Quarterly" (JMCQ) 2019–Top Journal in Communications and Media Studies.

M. Jalal, J. Spjut, B. Boudaoud, M. Betke, SIDOD: A Synthetic Image Dataset for 3D Object Pose Recognition with Distractors, 6th WiCV Workshop at Computer Vision and Pattern Recognition, Long Beach, CA, USA, 2019, 3 pages.

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.

SELECTED HONORS & AWARDS

Outstanding reviewer (top 5% student reviewers) for International Conference on Computer Vision (ICCV), August 31, 2021.

Scholarship recipient to attend AI-DLDA 2020 international summer school on artificial intelligence from deep learning to data analytics, June 29-July3, 2020. [acceptance rate: 11.11%]

Hariri Institute for Computing Graduate Student Fellowship, June 2019. $7500

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.

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

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.

Google travel scholarship for attending VLDB15.

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

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.

SELECTED TEACHING

Teaching assistant for **Women's Accelerator: Fundamentals of Deep Learning for Computer Vision**, NVIDIA GPU Technology Conference.

Student coach for the basic track of **Data+Narrative** intensive course at the BU College of Communications, supervised by Professor Maggie Mulvihill.

Teaching assistant for **Introduction to Database Systems (CS460/660)**, Instructor: Dr. George Kollios, Department of Computer science, Boston University.

Instructor for **Network Laboratory**, Computer Engineering Department, Sharif University of Technology.

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

RESEARCH TALKS

Image and Text Analysis of Public Communication, BU AI4ALL Program, July 29, 2021.

3D Human-Object Interaction Reconstruction, BU ARTEMIS Project, July 8, 2021.

2D/3D Pose Estimation in Animals, Humans, and Objects, at Neuro-Autonomy: Neuroscience-Inspired Perception, Navigation, and Spatial Awareness for Autonomous Robots kickoff meeting at Boston University, November 14, 2019.

Creating Synthetic Datasets using Game Engines for Computer Vision Applications, BU AI4ALL program, July 31, 2019.

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.

SELECTED PROFESSIONAL SERVICES

ICML Women in Machine Learning (WiML) Virtual Un-Workshop Student Volunteer, July 2020.

ICLR 2020 Student Volunteer, May 2020.

Boston University Women Chapter of ACM (ACM-W) Student Chapter – President, FY 2019-2020.

Reviewer for ICCV2021, EACL SRW 2021, WACV 2021, WiCV ECCV2020, ACL SRW 2020, EMNLP 2020, CVPR 2020, IJCAI-PRICAI 2020, ICML 2020, AAAI 2020, Universal Access in the Information Society" journal 2019, PLOSone journal 2019, Graph Representation Learning Workshop, NeurIPS 2019, Women in Machine Learning (WiML) NeurIPS 2019, 'Mathematical Problems in Engineering' journal 2019, Women in Computer Vision (WiCV), CVPR 2019, ACL SRW 2019, SciPy 2019, SciPy 2018.

Nominated as Ph.D. Student Representative for Boston University CS Department, FY 2018-2019 and FY 2019-2020.

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

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

Activity chair for Women in Computing (WACM) at University of Wisconsin-Madison, September 2013-September 2015.

CERTIFICATES

Human Subjects Protection Training: Biomedical Focus, Issued by CITI Program, February 22 2022.

HIPAA for Business Associates, Issued by HIPAA Exams, Inc., January 4 2021.

Fundamentals of Deep Learning for Computer Vision, Issued by NVIDIA Deep Learning Institute, March 17 2019.

Human Subjects Protection Training: Social & Behavioral Focus, Issued by CITI Program, expired.

UW-Madison HIPAA Training Course, Issued by UW Office of Compliance, April 10 2017.

LANGUAGES

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

HOBBIES

Endurance road cycling, Sailing, Swimming, Kayaking, XC Skiing, Cooking, Video creation, Watercolor painting, Portrait drawing, Organizing events, Video games.