

CURRICULUM VITAE

SARAH ADEL BARGAL

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RESEARCH INTERESTS	Computer Vision and Machine Learning.	
ACADEMIC APPOINTMENTS	Research Assistant Professor , Computer Science, Boston University.	2019
	Postdoctoral Associate , Computer Science, Boston University.	2018 - 2019
	Research Fellow , Computer Science, Boston University.	2013 - 2018
	Teaching Fellow , Computer Science, Boston University.	2013 - 2016
	Lecturer , Computer Science, Gulf University for Science and Technology.	2009 - 2013
EDUCATION	Ph.D. , Computer Science, Boston University GPA: 4.00 Advisor: Prof. Stan Sclaroff Thesis topic: Grounding Deep Models of Visual Data	2013 - 2018
	M.Sc. , Computer Science, The American University in Cairo GPA: 3.96 (First on Graduation Class) Advisors: Prof. Amr Goneid, Dr. Rana el Kaliouby Thesis topic: Automated Facial Expression Recognition	2005 - 2007
	B.Sc. , Computer Science, Kuwait University GPA: 3.92 (Distinction with Class Honors) Minor: Statistics and Operations Research	2001 - 2005
AWARDS, AND SCHOLARSHIPS	IBM Ph.D. Fellowship.	2017
	Outstanding Teaching Fellow Award , Boston University.	2017
	Hariri Graduate Fellowship , Boston University.	2017
	ACM SIGMM Student Conference Scholarship to attend: Turing Award Celebration.	2017
	Office of Technology Development Award , Boston University.	2016
	Emotion Recognition Challenge (third place) , ICMI Conference.	2016
	Social Entrepreneurship Award , Boston University (BU).	2014
	Hariri Award for Transformative Computational Science Research , BU.	2014
	Yousef Jameel Scholarship , University of Cambridge. [Declined; multiple awards]	2013
	Merit Fellowship , The American University in Cairo.	2006 - 2007
	Laboratory Instruction Graduate Fellowship , The American University in Cairo.	2005 - 2006
	Dean's List Honors all years of undergraduate study, Kuwait University.	2001 - 2005
RECOGNITIONS	Distinguished Student Speaker , PhD Hooding Ceremony of Boston University.	2019
	Finalist , Adobe Research Fellowship.	2018
	Semi-Finalist , Snap Inc. Research Fellowship.	2018
TRAVEL AWARDS	Rising Stars 2017 , Stanford University.	2017
	Grace Hopper Conference Student Scholarship.	2017
	Grace Hopper Conference Award , Boston University.	2016
	Invited participant for the Grad Cohort Workshop of the CRA-W.	2016

PUBLICATIONS

- [1] N. Ruiz, A. Kortylewski, W. Qiu, C. Xie, S. A. Bargal, A. Yuille, S. Sclaroff. Simulated Adversarial Testing. *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. 2022
- [2] D. Bashkirova, M. Abdelfattah, Z. Zhu, J. Akl, F. Alladkani, P. Hu, V. Ablavsky, B. Calli, S.A. Bargal, K. Saenko. Zero-Waste: Towards Automated Waste Recycling. *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022. 2022
- [3] M. Oliu, S. A. Bargal, X. Baró, S. Sclaroff, and S. Escalera. Multi-varied Cumulative Alignment for Domain Adaptation. *International Conference on Image Analysis and Processing (ICIAP)*, 2022. 2022
- [4] S.A. Bargal, A. Zunino, V. Petsiuk, V. Murino, S. Sclaroff, K. Saenko. Beyond the Visual Analysis of Deep Model Saliency. *Book chapter, Springer Book: xxAI - Beyond Explainable Artificial Intelligence*, 2022. 2022
- [5] S. A. Bargal*, A. Zunino*, V. Petsiuk, J. Zhang, K. Saenko, V. Murino, S. Sclaroff. Guided Zoom: Zooming into Network Evidence to Refine Fine-grained Model Decisions. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 2021. 2021
- [6] A. Wan, L. Dunlap, D. Ho, J. Yin, S. Lee, H. Jin, S. Petryk, S. A. Bargal, J. E. Gonzalez. NBDT: Neural-Backed Decision Tree. *International Conference on Learning Representations (ICLR)*, 2021. 2021
- [7] S. A. Bargal*, A. Zunino*, P. Morerio, J. Zhang, S. Sclaroff, V. Murino. Excitation Dropout: Encouraging Plasticity in Deep Neural Networks. *International Journal of Computer Vision (IJCV)*, 2021. **Nominated for Misha Mahowald Prize.** 2021
- [8] S. A. Bargal*, A. Zunino*, R. Volpi, M. Sameki, J. Zhang, S. Sclaroff, V. Murino, K. Saenko. Explainable Deep Classification Models for Domain Generalization. *Workshop on Fair, Data-Efficient, and Trusted Computer Vision at IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021. 2021
- [9] N. Ruiz, S. A. Bargal, S. Sclaroff. Protecting Against Image Translation Deepfakes by Leaking Universal Perturbations from Black-Box Neural Networks. *Workshop on Security and Safety in Machine Learning Systems at International Conference on Learning Representations (ICLR)*, 2021. 2021
- [10] B. Spetter-Goldstein, N. Ruiz, S. A. Bargal. Examining the Human Perceptibility of Black-Box Adversarial Attacks on Face Recognition. *Workshop on The Prospects and Perils of Adversarial Machine Learning at International Conference on Machine Learning (ICML)*, 2021. 2021
- [11] K. Deglado, J. Origgi, T. Hasanpoor, H. Yu, D. Alessio, I. Arroyo, W. Lee, M. Betke, B. Woolf, S. A. Bargal. Prediction of Student Engagement. *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV) Workshops*, 2021. 2021
- [12] M. Monfort, A. Andonian, B. Zhou, K. Ramakrishnan, S. A. Bargal, Y. Yan, L. Brown, Q. Fan, D. Gutfreund, C. Vondrick, A. Oliva. Moments in Time Dataset: one million videos for event understanding. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 2020. 2020
- [13] N. Ruiz, S. A. Bargal, S. Sclaroff. Disrupting DeepFakes: Adversarial Attacks Against Conditional Image Translation Networks and Facial Manipulation Systems. *Workshop on Adversarial Machine Learning in Computer Vision at IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020. 2020
- [14] N. C. Garcia, S. A. Bargal, V. Ablavsky, P. Morerio, V. Murino, S. Sclaroff. DMCL: Distillation Multiple Choice Learning for Multimodal Action Recognition. *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2020. 2020
- [15] F. Cakir, K. He, S. A. Bargal, S. Sclaroff. Hashing with Mutual Information. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 2019. 2019
- [16] S. A. Bargal*, A. Zunino*, V. Petsiuk, J. Zhang, K. Saenko, V. Murino, S. Sclaroff. Guided Zoom: Questioning Network Evidence for Fine-grained Classification. *The British Machine Vision Conference (BMVC)*, 2019. 2019
- [17] D. Kim, S. A. Bargal, J. Zhang, S. Sclaroff. Multi-way Encoding for Robustness. 2019

IEEE Winter Conference on Applications of Computer Vision (WACV), 2019.

- [18] S. A. Bargal*, A. Zunino*, V. Petsiuk, J. Zhang, K. Saenko, V. Murino, S. Sclaroff. 2019
Are CNN Predictions based on Reasonable Evidence? *Workshop on Explainable Artificial Intelligence at IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019.
- [19] S. A. Bargal*, A. Zunino*, D.Kim, J. Zhang, V. Murino, S. Sclaroff. 2018
Excitation Backprop for RNNs. *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018. **Featured in CVPR Daily.**
- [20] K. He, F. Cakir, S. A. Bargal, S. Sclaroff. Hashing as Tie-Aware Learning to Rank. 2018
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2018.
- [21] J. Zhang, S. A. Bargal, Z. Lin, J. Brandt, X. Shen, S. Sclaroff. 2017
Top-down Neural Attention by Excitation Backprop. *International Journal of Computer Vision (IJCV)*, 2017.
- [22] F. Cakir, K. He, S. A. Bargal, S. Sclaroff. MIHash: Online Hashing with Mutual Information. 2017
International Conference on Computer Vision (ICCV), 2017.
- [23] S. Ma, S. A. Bargal, J. Zhang, L. Sigal, S. Sclaroff. Do Less and Achieve More: Training CNNs for Action Recognition Utilizing Action Images from the Web. 2017
The Journal of the Pattern Recognition Society (PR), 2017. **Office of Technology Development Award, Boston University.**
- [24] S. A. Bargal, E. Barsoum, C. Canton, C. Zhang, Emotion Recognition in the Wild from Videos using Images. 2016
International Conference on Multimodal Interaction (ICMI), 2016. **Third place: ICMI'16 Emotion Recognition Challenge.**
- [25] F. Cakir, S. A. Bargal, S. Sclaroff. Online Supervised Hashing. 2016
Computer Vision and Image Understanding Journal (CVIU), 2016.
- [26] S. A. Bargal, A. Welles, C. R. Chan, S. Howes, S. Sclaroff, E. Ragan, C. Johnson, C. Gill. Image-based Ear Biometric Smartphone App for Patient Identification in Field Settings. 2015
International Conference on Computer Vision Theory and Applications (VISAPP), 2015. **Social Entrepreneurship Award, Boston University.**
- [27] S. A. Bargal, R. el Kaliouby, A. Goneid, A. Nayfah. Classification of Mouth Action Units using Local Binary Patterns. 2012
International Conference on Image Processing, Computer Vision, and Pattern Recognition (IPCV), 2012.
- PAPERS UNDER REVIEW
- [1] N. Ruiz, H. Yu, D. Allessio, M. Jalal, A. Joshi, T. Murray, J. Magee, J. Whitehill, V. Ablavsky, S. Sclaroff, I. Arroyo, B. Woolf, S. A. Bargal, Margrit Betke. ATL-BP: Affect Transfer Learning for Behavior Prediction. 2022
- [2] Q. Fan, D. Kim, R. Chen, S. Sclaroff, S. A. Bargal. Analysis of Temporal Dependences in Video Action Models. 2022
- [3] Y. Song, H. Tillman, D. Lteif, A. Wan, D. Ho, S. A. Bargal, J. E. Gonzalez. GradPAM: Visual Explanations for Segmentation. 2022
- [4] S. Jain*, S. Majumdar*, I. Tourni*, A. Mustafin, D. Lteif, K. Saenko, S. Sclaroff, S. A. Bargal. Ani-GIFs: Domain Generalization for GIFs. 2022
- [5] N. Ruiz, S. A. Bargal, S. Sclaroff. Efficient Black-Box Disruptions of Image Translation Deepfake Generation Systems. 2022
- GRANTS
- PI, **NSF: Computer and Information Science and Engineering (CISE)**, Research Initiation Initiative (CRII), \$168,654. Status: submitted. 2021
- Co-PI (Boston University PI), **NSF: Program on Fairness in Artificial Intelligence in Collaboration with Amazon (FAI)**, \$976,673. Collaboration with University of California Santa Cruz and Johns Hopkins University. Status: submitted. 2021
- Co-PI (Boston University PI), **NSF: Research on Emerging Technologies for Teaching and Learning (RETTL)**, \$840,215. Collaboration with University of Massachusetts Amherst. Status: submitted. 2021
- Co-PI, **Facebook's Foundational Integrity Research**, \$99,990. Status: submitted. 2021

	PI, nVIDIA Hardware Grant Program , \$11,399. <i>Status: submitted.</i>	2021
	Co-PI, Cloud Credits for Research from Amazon Web Services , with Vasili Ramanishka and Ben Usman, 01/23/2019 - 12/31/2019, \$15,000. <i>Status: received.</i>	2019
	PI, nVIDIA GPU Grant , \$3,000. <i>Status: received.</i>	2019
INDUSTRY EXPERIENCE	IBM Research - Vision and Learning Group, <i>Research Intern</i> Manager: Rogerio Feris Project: Deep learning for action recognition from video	2017
	Microsoft Research - Group MIX, <i>Research Intern</i> Manager: Cha Zhang Project: Deep learning for emotion recognition from video	2016
	MIS - Oracle partner , <i>Software Developer</i> Project: Automated forms and reports generation	2005
INVITED TALKS AND LECTURES	Invited Keynote Speaker , CVPR workshop on: Fair, Data-Efficient and Trusted Computer Vision.	2021
	Guest Lecturer , EC 414 Machine Learning, College of Engineering, Boston University.	2021
	Invited Speaker , KAUST/Stanford.	2020
	Guest Lecturer , CS 585 Image and Video Computing Course, Boston University.	2020
	Invited Speaker , National Academy of Sciences, Arab-American Frontiers Symposium.	2019
	Invited Speaker , IEEE Applied Imagery Pattern Recognition (AIPR) workshop, D.C.	2019
	Invited Speaker , CSAIL, MIT.	2019
	Invited Speaker , Google, Cambridge MA.	2019
	Invited Speaker , Computational Science Workshop, Harvard University.	2019
	Invited Speaker , Law School, BU/MIT Technology Law Clinic, Boston University.	2019
	Invited Speaker , Geometric Analysis Approach to AI Workshop, Harvard University.	2019
	Invited Speaker , College of Information and Computer Science, UMass Amherst.	2019
	Invited Keynote Speaker , AI4ALL, Boston University.	2018
	Invited Speaker , New England Computer Vision Workshop, Harvard University.	2018
	Invited Speaker , Machine Intelligence Conference, MIT Media Lab.	2018
	Invited Speaker , Computer Science Department, Tufts University.	2018
	Invited to present our work on <i>Excitation Backprop for RNNs</i> at the CVPR 2018 Workshop: "Brave New Ideas for Video Understanding."	2018
	Guest Lecturer , CS 480/680 Computer Graphics Course, Boston University.	2018
	Guest Lecturer , CS 542 Machine Learning Course, Boston University.	2017
	Guest Lecturer , CS 591 Deep Learning Course, Boston University.	2017
	Guest Speaker , Computer Science Dept. of the American University in Cairo.	2017
	Invited Speaker , Affectiva, Boston, MA.	2015
PROFESSIONAL ACTIVITIES	Guest Editor , special issue of the Frontiers on Computer Vision Journal.	2021-2022
	PhD Oral Exam Committee Member . Dina Bashkirova, <i>Disentanglement in Unpaired Image-to-Image Translation</i> , Boston University.	2022
	Third Reader of Doctoral Thesis Examining Committee . Xiao Zhou, <i>Non-competitive and Competitive Deep Learning for Imaging Applications</i> , Boston University.	2021
	PhD Dissertation Prospectus Committee Member . Donghyun Kim, <i>Learning Generalizable Representation with Self-supervised Learning</i> , Boston University.	2021
	PhD Oral Exam Committee Member . Vitali Petsiuk, <i>Saliency Methods for Explainable AI</i> , Boston University.	2021
	PhD Oral Exam Committee Member . Hao Yu, <i>Facial Expression Analysis for Predicting Student Engagement</i> , Boston University.	2021
	NSF Panelist , CISE.	2020
	Fourth Reader and Chair of Doctoral Thesis Examining Committee . Xingchao Peng, <i>Domain Adaptive Learning with Disentangled Features</i> , Boston University.	2020

	Chair of Doctoral Thesis Examining Committee. Xide Xia, <i>Deep Representation Learning for Photorealistic Content Creation</i> , Boston University.	2020
	Area Chair , IEEE Winter Conference on Applications of Computer Vision (WACV).	2020
	Technical Program Committee Member , AffectiCom Workshop, IEEE International Conference on Communications (ICC).	2020
	Affiliate , Hariri Institute of Computing, Boston University.	2019 - 2022
	Core Faculty , Artificial Intelligence Research (AIR) Initiative, Boston University.	2019 - 2022
	Program Chair , Multi-modal Video Analysis and Moments in Time Challenge (MMVAMT) Workshop, ICCV.	2019
	Reviewer for CVPR, ICCV, ECCV, ICMI, AAAI, FG, TPAMI, AI Letters, TKDE, and CogSys.	2013 - 2022
	Consultant on Project SEARCH: Scanning Ears for Child Health, Boston University.	2017
	Student Representative on the Graduate Academic Affairs Committee , a Graduate School of Arts & Sciences Governance Committee at Boston University.	2015
	Seminar Series Coordinator , Image and Video Computing Group, Boston University.	2015
	Judging Committee Member of Gulf Programming Competition (GPC) in Abu Dhabi.	2012, 2013
OUTREACH AND SERVICE	Co-Director , AI4ALL Program, Boston University.	2019 - 2022
	Committee Chair , Computer Science Department's Graduate Awards Committee, Boston University.	2021-2022
	Committee Member , Research Faculty Merit Review Committee, Boston University.	2022
	Speaker , CS Research Workshop for Undergraduates and Masters, Boston University.	2021
	Panelist , Artemis Project, Boston University.	2021
	Committee Member , Computer Science Department's Professor of Practice Search Committee, Boston University.	2020-2021
	Committee Member , Computer Science Department's committee for external fellowship nomination of doctoral students, Boston University.	2020-2022
	Faculty Scholarship Application Reviewer , Grace Hopper Conference.	2020
	Computer Science Instructor , Boston University's Summer High School Program.	2019
	Committee Member , Computer Science Department's committee for teaching and research awards for doctoral students, Boston University.	2019
	GWISE Representative (Graduate Women in STEM), Boston University.	2018
	Panelist , Building your professional/scholarly profile, AI retreat, Boston University.	2018
	Panelist , uWise (Undergraduate Women in STEM), Boston University.	2017
MENTORING	PhD Students at Boston University and UC Berkeley *	2017 - 2022
	Alvin Wan* (with Joseph Gonzalez), Donghyun Kim (with Stan Sclaroff), Lisa Dunlap* (with Joseph Gonzalez), Nataniel Ruiz (with Stan Sclaroff), Vitali Petsiuk (with Kate Saenko), Isidora Tourni, Diala Lteif, and Arsenii Mustafin.	
	MSc Students at Boston University	2019 - 2022
	Juan Origgi, Tania Hasanpoor, Weifan Chen, Shubhangi Jain, and Shoumik Majumdar.	
	Undergraduate Students at Boston University and The American University in Cairo ⁺	2019 - 2022
	Benji Spetter-Goldstein, Kevin Delgado, Tabitha Oanda (2022 Scarlet Key Honor), and Mohamed Abdelfattah ⁺ .	
TEACHING	Boston University, Department of Computer Science	2016 - 2022
	CS 523 Deep Learning (38 students)	
	CS 542 Machine Learning (120 students)	
	CS 440 Artificial Intelligence (90 students)	
	CS 995 Directed Study: Computer Vision (6 students)	
	CS 112 Intro to Computer Science II (Data Structures and Algorithms) (35 students)	
	CS 480/680 Intro to Computer Graphics (60 students)	
	Outstanding Teaching Fellow Award	