James Seale Smith

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RESEARCH FOCUS

I want to build vision and language systems which learn from data that is from multiple sources and distributions. I am specifically focused on solutions which **reduce re-training** and/or **protect data privacy**. To work towards this goal, I look at problems such as: **lifelong/continual learning**, **knowledge distillation**, **federated learning**, and **low-label learning**.

EDUCATION

PhD in Machine Learning, Georgia Institute of Technology (current)
Advisor: *Dr. Zsolt Kira*
Enrolled: August 2018 | Expected Graduation Date: December 2023

Master of Science in Electrical Engineering, Auburn University (May 2018)
Bachelor of Electrical Engineering, Auburn University (May 2017)

SELECTED PUBLICATIONS

[1] **James Smith** et al. "CODA-Prompt: COntinual Decomposed Attention-based Prompting for Rehearsal-Free Continual Learning", *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023. **(25.8% acceptance rate)** [Paper]

[2] **James Smith** et al. "ConStruct-VL: Data-Free Continual Structured VL Concepts Learning", *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023. **(25.8% acceptance rate)** [Paper]

[3] Paola Cascante-Bonilla, Leonid Karlinsky, **James Smith**, Yanjun Qi, Vicente Ordonez "On the Transferability of Visual Features in Generalized Zero-Shot Learning", *arXiv preprint arXiv: 2211.12494*, 2022. [Paper]

[4] **James Smith***, Junjiao Tian*, Zsolt Kira. "FedFOR: Stateless Heterogeneous Federated Learning with First-Order Regularization", *arXiv preprint arXiv:2209.10537*, 2022. [Paper]

[5] **James Smith**, Junjiao Tian, Yen-Chang Hsu, Zsolt Kira. "A Closer Look at Rehearsal-Free Continual Learning", *arXiv preprint arXiv:2203.17269*, 2022. [Paper]

[6] Yen-Chang Hsu, **James Smith**, Yilin Shen, Zsolt Kira, Hongxia Jin. "A Closer Look at Knowledge Distillation with Features, Logits, and Gradients", *arXiv preprint arXiv:2203.10163*, 2022. [Paper]

[7] Mayank Lunayach, **James Smith**, Zsolt Kira. "Lifelong Wandering: A realistic few-shot online continual learning setting", *CVPR Workshop on Continual Learning*, 2022. [Paper]

[8] **James Smith**, Zachary Seymour, Han-Pang Chiu. "Incremental Learning with Differentiable Architecture and Forgetting Search", *International Joint Conference on Neural Networks (IJCNN)*, 2022. **(oral)** [Paper]

[9] **James Smith**, Yen-Chang Hsu, Jonathan Balloch, Yilin Shen, Hongxia Jin, Zsolt Kira. "Always Be Dreaming: A New Approach for Data-Free Class-Incremental Learning", *International Conference on Computer Vision (ICCV)*, 2021. **(25.9% acceptance rate)** [Paper] [Code]

[10] **James Smith**, Cameron Taylor, Seth Baer, Constantine Dovrolis. "Unsupervised Progressive Learning and the STAM Architecture", *International Joint Conference on Artificial Intelligence (IJCAI)*, 2021. **(13.9% acceptance rate)** [Paper] [Code]

*Equal Contribution

[11] **James Smith**, Yen-Chang Hsu, Jonathan Balloch, Zsolt Kira. "Memory-Efficient Semi- [Paper] Supervised Continual Learning: The World is its Own Replay Buffer", *International Joint* [Code] *Conference on Neural Networks (IJCNN)*, 2021. **(oral)**

[12] **James Smith**, Bo Wu, Bogdan Wilamowski. "Neural Network Training with Levenberg– [Paper] Marquardt and Adaptable Weight Compression", *IEEE Transactions on Neural Networks and Learning Systems*, 30(2), 580-587, 2019.

RELEVANT EXPERIENCE		
	Georgia Tech Atlanta, GA *Graduate Research Assistant, College of Computing*	Since Aug 2018
	Samsung Research America Mountain View, CA *Research Intern, PhD*	Since Jan 2023
	MIT-IBM Watson AI Lab Cambridge, MA *Research Intern, PhD*	May 2022 – Dec 2022
	SRI International Princeton, NJ *Computer Vision Research Intern, PhD*	May 2021 – Aug 2021
	Radiance Technologies Huntsville, AL *Machine Learning Intern*	May 2018 – Aug 2018
	Auburn University Auburn, AL *Graduate Research Assistant, Department of Electrical and Computer Engineering*	May 2017 – May 2018
	Naval Research Laboratories Washington, DC *Research Intern*	May 2015 – Aug 2015

HONORS & AWARDS

NSF Graduate Research Fellowship Program Honorable Mention	2018
Alton B. Zerby and Carl T. Koerner National Outstanding Electrical and Computer Engineering Student Award, L.A. Alumni Chapter IEEE/HKN **(one of two nationwide recipients)**	2018
President's Award, Samuel Ginn College of Engineering **(single recipient)**	2017
ECE Outstanding Student of the Year, Auburn University **(single recipient)**	2017

SERVICE & LEADERSHIP

Leadership

Co-organizer of Continual Causality Bridge Program at AAAI 2023	2022-2023
Board Member of ContinualAI	2022
Co-host of ContinualAI Weekly Seminar Series	2022
Co-organizer of Georgia Tech ML PhD Student Seminar Series	2020-2022

Mentoring

Mayank Lunayach (MS)	Jan 2021 – Present
Yash Jakhotiya (MS)	Jan 2022 – Present
Aaditya Singh (MS)	August 2022 – Present
Vyshnavi Gutta (MS)	August 2022 – Present