

# 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", *arXiv preprint arXiv: 2211.13218*, 2022. [\[Paper\]](#)
- [2] **James Smith** et al. "ConStruct-VL: Data-Free Continual Structured VL Concepts Learning", *arXiv preprint arXiv: 2211.09790*, 2022. [\[Paper\]](#)
- [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-Supervised Continual Learning: The World is its Own Replay Buffer”, *International Joint Conference on Neural Networks (IJCNN)*, 2021. **(oral)** [\[Paper\]](#) [\[Code\]](#)

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

## RELEVANT EXPERIENCE

**Georgia Tech** Atlanta, GA Since Aug  
Graduate Research Assistant, College of Computing 2018

**Samsung Research America** Mountain View, CA Since Jan  
Research Intern, PhD 2023

**MIT-IBM Watson AI Lab** Cambridge, MA May 2022 –  
Research Intern, PhD Dec 2022

**SRI International** Princeton, NJ May 2021 –  
Computer Vision Research Intern, PhD Aug 2021

**Radiance Technologies** Huntsville, AL May 2018 –  
Machine Learning Intern Aug 2018

**Auburn University** Auburn, AL May 2017 –  
Graduate Research Assistant, Department of Electrical and Computer Engineering May 2018

**Naval Research Laboratories** Washington, DC May 2015 –  
Research Intern 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