

RESEARCH INTERESTS

I'm particularly interested in making the state-of-the-art in computer vision more efficient. My goal is to avoid common strategies such as pruning and quantization and instead search for orthogonal methods to increase efficiency—with the hope that these methods can all be used together for a multiplicative effect.





TECHNICAL EXPERIENCE

Languages	Python, C++, Java, JavaScript, Lua
Frameworks	PyTorch, TensorFlow, NumPy
Areas	Vision, Diffusion, Detection, Efficiency, Self Supervision
Skills	Pushing SotA, Training Large Models (e.g., 256 GPUs)

PUBLICATIONS

2024	Window Attention is Bugged: How not to Interpolate Position Embeddings Daniel Bolya, Chaitanya Ryali, Judy Hoffman, Christoph Feichtenhofer	ICLR 2024
	Ziplit! Merging Models from Different Tasks without Training George Stoica*, Daniel Bolya*, Jakob Bjorner, Taylor Hearn, Judy Hoffman	ICLR 2024
2023	Hiera: A Hierarchical Vision Transformer without the Bells-and-Whistles Chaitanya Ryali*, Yuan-Ting Hu*, Daniel Bolya*, Chen Wei, Haoqi Fan, Po-Yao Huang, Vaibhav Aggarwal, Arkabandhu Chowdhury, Omid Poursaeed, Judy Hoffman, Jitendra Malik, Yanghao Li*, Christoph Feichtenhofer*	ORAL ICML 2023
	Token Merging for Fast Stable Diffusion Daniel Bolya, Judy Hoffman	ORAL CVPR 2023 ECV Workshop
	Token Merging: Your ViT But Faster Daniel Bolya, Cheng-Yang Fu, Xiaoliang Dai, Peizhao Zhang, Christoph Feichtenhofer, Judy Hoffman	ORAL TOP 5% ICLR 2023
2022	Hydra attention: Efficient attention with many heads Daniel Bolya, Cheng-Yang Fu, Xiaoliang Dai, Peizhao Zhang, Judy Hoffman	BEST PAPER ECCV 2022 CADL Workshop
2021	Scalable diverse model selection for accessible transfer learning Daniel Bolya*, Rohit Mittapalli*, Judy Hoffman	NeurIPS 2021
2020	TIDE: A General Toolbox for Identifying Object Detection Errors Daniel Bolya, Sean Foley, James Hays, Judy Hoffman	SPOTLIGHT ECCV 2020
	Likelihood Landscapes: A Unifying Principle Behind Many Adversarial Defenses Fu Lin, Rohit Mittapalli, Prithvijit Chattopadhyay, Daniel Bolya, Judy Hoffman	ORAL ECCV 2020 AROW Workshop
	YOLACT++: Better Real-time Instance Segmentation Daniel Bolya*, Chong Zhou*, Fanyi Xiao, Yong Jae Lee	TPAMI 2020
2019	YOLACT: Real-time Instance Segmentation Daniel Bolya, Chong Zhou, Fanyi Xiao, Yong Jae Lee	ORAL ICCV 2019
2016	Using Artificial Intelligence Systems for Autonomous Visual Comprehension and Handwriting Generation Daniel Bolya*, Dylan McLeod*	ISEF 2016

EDUCATION

May 2024 (Projected)	Machine Learning	
August 2019	PH.D. · Georgia Institute of Technology 	
	Advised by Judy Hoffman.	
March 2019	Computer Science	
September 2016	B.S. · University of California Davis 	
	Math Minor. Research advised by Yong Jae Lee.	
















AWARDS

2022	Best Paper Award (ECCV 2022 CADL Workshop)	<i>Hydra Attention: Efficient Attention with Many Heads</i>
2020	National Science Foundation Graduate Research Fellowship	
2020	Best Paper Runner-Up (ECCV 2020 AROW Workshop)	<i>Likelihood Landscapes: A Unifying Principle...</i>
2019	COCO Challenge Most Innovative Award	<i>YOLACT: Real-Time Instance Segmentation</i>
2019	Chancellor's Award for Excellence in Undergraduate Research Honorable Mention	<i>YOLACT: Real-Time Instance Segmentation</i>
2017	HackDavis Honorable Mention	<i>Proton: Positivity Generator</i>
2016	Intel International Science and Engineering Fair (ISEF) Finalist	<i>Handwritten Math Equation Solver</i>
2016	Sacramento STEM Fair 1st Place Category Award in Math and CS	<i>Handwritten Math Equation Solver</i>

2016 **Sacramento STEM Fair 3rd Place Grand Prize Award**
2016 **California State Science Fair Honorable Mention**
2016 **Intel Excellence in Computer Science**

Handwritten Math Equation Solver
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EMPLOYMENT

Ongoing August 2023	Graduate Research Assistant GEORGIA TECH · Atlanta, Georgia  Projected end date of May 2024. Advised by Judy Hoffman.	
August 2023 May 2020	NSF Graduate Research Fellow GEORGIA TECH · Atlanta, Georgia  Worked on PARC, ToMe for SD, and Ziplt! among others. Advised by Judy Hoffman.	
August 2023 May 2023	Research Scientist Intern (FAIR) META · San Francisco, California  Released HierA and worked to further push the state-of-the-art with HierA under Christoph Feichtenhofer.	
August 2022 May 2022	Research Scientist Intern (Meta AI) META · San Francisco, California  Worked on and released Hydra Attention and Token Merging under Cheng-Yang Fu.	
August 2021 May 2021	Research Scientist Intern (FAIR) META · Remote  Worked on grounded unsupervised part segmentation under Vignesh Ramanathan.	
May 2020 August 2019	Graduate Research Assistant GEORGIA TECH · Atlanta, Georgia  Developed, released, and supported TIDE. Advised by Judy Hoffman.	
August 2019 April 2019	Research Assistant UC DAVIS · Davis, California  Released and supported YOLACT, as well as prepared for YOLACT++. Advised by Yong Jae Lee.	
March 2019 June 2018	Undergraduate Student Researcher UC DAVIS · Davis, California  Developed YOLACT, the first real-time instance segmentation method. Advised by Yong Jae Lee.	