Aaron Lou

aaronlou@stanford.edu | aaronlou.com

Education	**Stanford University**	Sep 2021 -
	PhD in Computer Science	
	Funding: NSF Graduate Research Fellowship	
	Cornell University	Aug 2017 - May 2021
	B.A. in Mathematics – *Summa Cum Laude*	
	B.A. in Computer Science – *Magna Cum Laude*	
	Completed 15 graduate level courses including core graduate math curriculum.	

Conference Publications

Aaron Lou*, Derek Lim*, Isay Katsman*, Leo Huang*, Qingxuan Jiang, Ser-Nam Lim, & Christopher De Sa. "Neural Manifold Ordinary Differential Equations". In *NeurIPS 2020: Thirty-fourth Conference on Neural Information Processing Systems*, December 2020.

Aaron Lou*, Isay Katsman*, Qingxuan Jiang*, Serge Belongie, Ser-Nam Lim, & Christopher De Sa. "Differentiating through the Fréchet Mean". In *ICML 2020: the Thirty-seventh International Conference on Machine Learning*, July 2020.

Workshop Publications

Isay Katsman*, **Aaron Lou***, Derek Lim*, Qingxuan Jiang*, Ser-Nam Lim, & Christopher De Sa. "Equivariant Manifold Flows". In *INNF+ 2021: ICML workshop on Invertible Neural Networks and Normalizing Flows,* Jun 2021.

Aaron Lou, Maximilian Nickel, Brandon Amos. "Deep Riemannian Manifold Learning". In *DiffGeo4DL 2020: NeurIPS workshop on Differential Geometry meets Machine Learning,* Dec 2020.

Horace He, **Aaron Lou***, Qingxuan Jiang*, Isay Katsman*, Serge Belongie, & Ser-Nam Lim. "Adversarial Example Decomposition". In *SPML 2019: ICML Workshop on Security and Privacy in Machine Learning,* June 2019.

In Submission

Tolga Birdal, **Aaron Lou**, Leonidas Guibas, Umut Simselski. "Intrinsic Dimension, Persistent Homology and Generalization in Neural Networks". Submitted to *NeurIPS 2021: Thirty-fifth Conference on Neural Information Processing Systems*, Dec 2021.

Research Experience	**Facebook AI**	May 2020 - Aug 2020
	Research Intern | New York, NY	

· Manifold learning w/ Dr. Brandon Amos & Dr. Maximilian Nickel
· Topology and data augmentation w/ Dr. Ser-Nam Lim.

	Cornell University Artificial Intelligence	Aug 2018 - May 2021
	Undergraduate Researcher | Ithaca, NY	

- Geometric machine learning w/ Prof. Christopher De Sa.
- Adversarial examples w/ Prof. Serge Belongie & Dr. Ser-Nam Lim.

Industry Experience	**Facebook AI**	Jun 2021 - Sep 2021
	Software Engineering Intern | Menlo Park, CA	

- Detectron2 w/ Vaibhav Aggarwal

	Google	May 2019 - Aug 2019
	Software Engineering Intern | Mountain View, CA	

- Google Maps incognito mode w/ Satwika Sarkar

Invited Talks	*Normalizing Flows on Manifolds*	Nov 2020
	Guest lecture for Stanford CS 468	
	Neural Manifold Ordinary Differential Equations	Jul 2020
	Spotlight talk at ICML INNF+ Workshop	

Awards	Harry S. Kieval Prize in Mathematics, Cornell University	May 2021
	NSF Graduate Research Fellowship	Mar 2021
	CRA 2021 Outstanding Undergraduate Research Award H.M.	Dec 2020
	ICPC North American Championship Bronze Medal	Feb 2020
	ICPC Greater New York Regional Champion	Oct 2019
	Putnam Exam Top 250	Dec 2018
	Cornell Freshman Math Exam Champion	May 2018

Teaching	CS 5199 (Competitive Programming) TA	Fa, Sp 2019
	CS 2802 (Honors Discrete Structures) TA	Sp 2019

Mentorship	**Cornell University Artificial Intelligence**	May 2020 - May 2021
	Co-president | Ithaca, NY	

- Led organization in promoting and providing resources for undergraduate research in machine learning.
- Outlined research agenda and mentored team members.
- Organized reading groups in specialized topics.

Service	*Conference Reviewer:* ICLR 2022, NeurIPS 2021
	Workshop Reviewer: INNF+ 2021, DiffGeo4DL 2020
	Secondary Reviewer: ICML 2021, NeurIPS 2020