

Brandon Amos

✉ brandon.amos.cs@gmail.com • 🌐 bamos.github.io • 🐙 [bamos](https://github.com/bamos)

Last updated on February 21, 2026

Education

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|---|-----------|
| Ph.D. in Computer Science, <i>Carnegie Mellon University</i> (0.00/0.00) Thesis: <i>Differentiable Optimization-Based Modeling for Machine Learning</i> Advisor: J. Zico Kolter | 2014–2019 |
| B.S. in Computer Science, <i>Virginia Tech</i> (3.99/4.00) | 2011–2014 |

Positions

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|---|-----------|
| Member of Technical Staff, <i>Reflection AI</i> , New York City | 2025– |
| Research Scientist in FAIR, <i>Meta Superintelligence Labs</i> , New York City | 2019–2025 |
| Visiting Lecturer of Computer Science, <i>Cornell Tech</i> , New York City | 2024 |
| Research Assistant, <i>Carnegie Mellon University</i> (with J. Zico Kolter on ML and optimization) | 2016–2019 |
| Research Intern, <i>Intel Labs</i> , Santa Clara (with Vladlen Koltun on computer vision) | 2018 |
| Research Intern, <i>Google DeepMind</i> , London (with Nando de Freitas and Misha Denil on RL) | 2017 |
| Research Assistant, <i>Carnegie Mellon University</i> (with Mahadev Satyanarayanan on mobile systems) | 2014–2016 |
| Research Intern, <i>Adobe Research</i> , San Jose (with David Tompkins on distributed systems) | 2014 |
| Research Assistant, <i>Virginia Tech</i> (with Layne Watson and David Easterling on optimization) | 2013–2014 |
| Research Assistant, <i>Virginia Tech</i> (with Jules White and Hamilton Turner on mobile systems) | 2012–2014 |
| Research Assistant, <i>Virginia Tech</i> (with Binoy Ravindran and Alastair Murray on compilers) | 2012–2014 |
| Software Intern, <i>Snowplow</i> (Scala development) | 2013–2014 |
| Software Intern, <i>Qualcomm</i> , San Diego (Python and C++ development) | 2013 |
| Software Intern, <i>Phoenix Integration</i> , Virginia (C++, C#, and Java development) | 2012 |
| Network Administrator Intern, <i>Sunapsys</i> , Virginia | 2011 |

Honors & Awards

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| AISTATS Best Reviewer | 2025 |
| Outstanding Paper Award at the ICML Theoretical Foundations Workshop | 2024 |
| NeurIPS Top Reviewer | 2022 |
| ICML Outstanding Reviewer | 2022 |
| ICLR Outstanding Reviewer | 2019 |
| Best Paper Award at ACM MMSys | 2017 |
| NSF Graduate Research Fellowship | 2016–2019 |
| Nine undergraduate scholarships | 2011–2014 |

Roanoke County Public Schools Engineering, Salem–Roanoke County Chamber of Commerce, Papa John's, Scottish Rite of Freemasonry, VT Intelligence Community Center for Academic Excellence, VT Pamplin Leader, VT Benjamin F. Bock, VT Gay B. Shober, VT I. Luck Gravett

Publications [Google Scholar: 12.3k+ citations and an h-index of 43]

Selected publications I am a primary author on are highlighted.

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| 2026..... | |
| 1. <i>Cultivating Pluralism In Algorithmic Monoculture: The Community Alignment Dataset</i> Lily H Zhang, Smitha Milli, Karen Long Jusko, Jonathan Smith, Brandon Amos , Wassim Bouaziz, Jack Kussman, Manon Revel, Lisa Titus, Bhaktipriya Radharapu, Jane Yu, Vidya Sarma, Kristopher Rose, and Maximilian Nickel ICLR 2026 | |

2. *The Surprising Difficulty of Search in Model-Based Reinforcement Learning*
Wei-Di Chang, Mikael Henaff, **Brandon Amos**, Gregory Dudek, and Scott Fujimoto
arXiv 2026
 3. *Score Function Gradient Estimation to Widen the Applicability of Decision-Focused Learning*
Mattia Silvestri, Senne Berden, Jayanta Mandi, Ali İrfan Mahmutogullari, **Brandon Amos**, Tias Guns,
and Michele Lombardi
JAIR 2026
- 2025.....
4. *Online Intrinsic Rewards for Decision Making Agents from Large Language Model Feedback* code
Qinqing Zheng, Mikael Henaff, Amy Zhang, Aditya Grover, and **Brandon Amos**
RLC 2025
 5. *AdvPrompter: Fast Adaptive Adversarial Prompting for LLMs* code slides
Anselm Paulus*, Arman Zharmagambetov*, Chuan Guo, **Brandon Amos**[†], and Yuandong Tian[†]
ICML 2025
 6. *Wasserstein Flow Matching: Generative modeling over families of distributions* code
Doron Haviv, Aram-Alexandre Pooladian, Dana Pe'er, and **Brandon Amos**
ICML 2025
 7. *Adjoint Sampling: Highly Scalable Diffusion Samplers via Adjoint Matching* code
Aaron Havens, Benjamin Kurt Miller, Bing Yan, Carles Domingo-Enrich, Anuroop Sriram,
Brandon Wood, Daniel Levine, Bin Hu, **Brandon Amos**, Brian Karrer, Xiang Fu, Guan-Horng Liu, and
Ricky T. Q. Chen
ICML 2025
 8. *Exact Byte-Level Probabilities from Tokenized Language Models for FIM-Tasks and Model Ensembles*
code
Buu Phan, **Brandon Amos**, Itai Gat, Marton Havasi, Matthew Muckley, and Karen Ullrich
ICLR 2025
 9. *Meta Flow Matching: Integrating Vector Fields on the Wasserstein Manifold* code
Lazar Atanackovic, Xi Zhang, **Brandon Amos**, Mathieu Blanchette, Leo J Lee, Yoshua Bengio,
Alexander Tong, and Kirill Neklyudov
ICLR 2025
 10. *AdvPrefix: An Objective for Nuanced LLM Jailbreaks*
Sicheng Zhu, **Brandon Amos**, Yuandong Tian, Chuan Guo, and Ivan Evtimov
NeurIPS 2025
 11. *AlgoTune: Can Language Models Speed Up General-Purpose Numerical Programs?* code
Ori Press, **Brandon Amos**, Haoyu Zhao, Yikai Wu, Samuel K. Ainsworth, Dominik Krupke,
Patrick Kidger, Touqir Sajed, Bartolomeo Stellato, Jisun Park, Nathanael Bosch, Eli Meril,
Albert Steppi, Arman Zharmagambetov, Fangzhao Zhang, David Pérez-Piñeiro, Alberto Mercurio,
Ni Zhan, Talor Abramovich, Kilian Lieret, Hanlin Zhang, Shirley Huang, Matthias Bethge, and
Ofir Press
NeurIPS Datasets and Benchmarks Track 2025
 12. *BaNEL: Exploration Posteriors for Generative Modeling Using Only Negative Rewards*
Sangyun Lee, **Brandon Amos**, and Giulia Fanti
arXiv 2025

13. *A Fully First-Order Layer for Differentiable Optimization* [code](#)
Zihao Zhao, Kai-Chia Mo, Shing-Hei Ho, **Brandon Amos**, and Kai Wang
arXiv 2025
 14. *Safety Alignment of LMs via Non-cooperative Games* [code](#)
Anselm Paulus, Ilia Kulikov, **Brandon Amos**, Rémi Munos, Ivan Evtimov, Kamalika Chaudhuri, and Arman Zharmagambetov
arXiv 2025
- 2024.....
15. *Neural Optimal Transport with Lagrangian Costs* [code](#)
Aram-Alexandre Pooladian, Carles Domingo-Enrich, Ricky T. Q. Chen, and **Brandon Amos**
UAI 2024
 16. *Learning to Warm-Start Fixed-Point Optimization Algorithms* [code](#)
Rajiv Sambharya, Georgina Hall, **Brandon Amos**, and Bartolomeo Stellato
JMLR 2024
 17. *Unlocking Tokens as Data Points for Generalization Bounds on Larger Language Models* [code](#)
Sanae Lotfi, Yilun Kuang, Marc Anton Finzi, **Brandon Amos**, Micah Goldblum, and Andrew Gordon Wilson
NeurIPS 2024
 18. *Stochastic Optimal Control Matching* [code](#)
Carles Domingo-Enrich, Jiequn Han, **Brandon Amos**, Joan Bruna, and Ricky T. Q. Chen
NeurIPS 2024
 19. *To the Globe (TTG): Towards Language-Driven Guaranteed Travel Planning*
Da JU, Song Jiang, Andrew Cohen, Aaron Foss, Sasha Mitts, Arman Zharmagambetov, **Brandon Amos**, Xian Li, Justine T Kao, Maryam Fazel-Zarandi, and Yuandong Tian
EMNLP Demo 2024
- 2023.....
20. *Tutorial on amortized optimization* [code](#)
Brandon Amos
Foundations and Trends in Machine Learning 2023
 21. *On amortizing convex conjugates for optimal transport* [code](#)
Brandon Amos
ICLR 2023
 22. *End-to-End Learning to Warm-Start for Real-Time Quadratic Optimization* [code](#)
Rajiv Sambharya, Georgina Hall, **Brandon Amos**, and Bartolomeo Stellato
L4DC 2023
 23. *Meta Optimal Transport* [code](#)
Brandon Amos, Samuel Cohen, Giulia Luise, and Ievgen Redko
ICML 2023
 24. *Multisample Flow Matching: Straightening Flows with Minibatch Couplings*
Aram-Alexandre Pooladian, Heli Ben-Hamu, Carles Domingo-Enrich, **Brandon Amos**, Yaron Lipman, and Ricky T. Q. Chen
ICML 2023

25. *Semi-Supervised Offline Reinforcement Learning with Action-Free Trajectories* [code](#)
Qinqing Zheng, Mikael Henaff, **Brandon Amos**, and Aditya Grover
ICML 2023
 26. *TaskMet: Task-Driven Metric Learning for Model Learning* [code](#)
Dishank Bansal, Ricky T. Q. Chen, Mustafa Mukadam, and **Brandon Amos**
NeurIPS 2023
 27. *Landscape Surrogate: Learning Decision Losses for Mathematical Optimization Under Partial Information* [code](#)
Arman Zharmagambetov, **Brandon Amos**, Aaron Ferber, Taoan Huang, Bistra Dilkina, and Yuandong Tian
NeurIPS 2023
 28. *Koopman Constrained Policy Optimization: A Koopman operator theoretic method for differentiable optimal control in robotics* [code](#)
Matthew Retchin, **Brandon Amos**, Steven Brunton, and Shuran Song
ICML Differentiable Almost Everything Workshop 2023
- 2022.....
29. *Cross-Domain Imitation Learning via Optimal Transport* [code](#)
Arnaud Fickinger, Samuel Cohen, Stuart Russell, and **Brandon Amos**
ICLR 2022
 30. *Matching Normalizing Flows and Probability Paths on Manifolds*
Heli Ben-Hamu*, Samuel Cohen*, Joey Bose, **Brandon Amos**, Aditya Grover, Maximilian Nickel, Ricky T. Q. Chen, and Yaron Lipman
ICML 2022
 31. *Semi-Discrete Normalizing Flows through Differentiable Tessellation*
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel
NeurIPS 2022
 32. *Theseus: A Library for Differentiable Nonlinear Optimization* [code](#)
Luis Pineda, Taosha Fan, Maurizio Monge, Shobha Venkataraman, Paloma Sodhi, Ricky Chen, Joseph Ortiz, Daniel DeTone, Austin Wang, Stuart Anderson, Jing Dong, **Brandon Amos**, and Mustafa Mukadam
NeurIPS 2022
 33. *Nocturne: a driving benchmark for multi-agent learning* [code](#)
Eugene Vinitzky, Nathan Lichtlé, Xiaomeng Yang, **Brandon Amos**, and Jakob Foerster
NeurIPS Datasets and Benchmarks Track 2022
- 2021.....
34. *On the model-based stochastic value gradient for continuous reinforcement learning* [code](#) [slides](#)
Brandon Amos, Samuel Stanton, Denis Yarats, and Andrew Gordon Wilson
L4DC 2021 (Oral)
 35. *Riemannian Convex Potential Maps* [code](#) [slides](#)
Samuel Cohen*, **Brandon Amos***, and Yaron Lipman
ICML 2021

36. *CombOptNet: Fit the Right NP-Hard Problem by Learning Integer Programming Constraints* [code](#)
Anselm Paulus, Michal Rolínek, Vít Musil, **Brandon Amos**, and Georg Martius
ICML 2021
37. *Scalable Online Planning via Reinforcement Learning Fine-Tuning*
Arnaud Fickinger, Hengyuan Hu, **Brandon Amos**, Stuart Russell, and Noam Brown
NeurIPS 2021
38. *Aligning Time Series on Incomparable Spaces* [code](#) [slides](#)
Samuel Cohen, Giulia Luise, Alexander Terenin, **Brandon Amos**, and Marc Peter Deisenroth
AISTATS 2021
39. *Learning Neural Event Functions for Ordinary Differential Equations* [code](#)
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel
ICLR 2021
40. *Neural Spatio-Temporal Point Processes* [code](#)
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel
ICLR 2021
41. *Improving Sample Efficiency in Model-Free Reinforcement Learning from Images* [code](#)
Denis Yarats, Amy Zhang, Ilya Kostrikov, **Brandon Amos**, Joelle Pineau, and Rob Fergus
AAAI 2021
42. *Neural Fixed-Point Acceleration for Convex Optimization* [code](#)
Shobha Venkataraman* and **Brandon Amos***
ICML AutoML Workshop 2021
43. *Sliced Multi-Marginal Optimal Transport*
Samuel Cohen, Alexander Terenin, Yannik Pitcan, **Brandon Amos**, Marc Peter Deisenroth, and K S Sesh Kumar
NeurIPS OTML Workshop 2021
44. *Input Convex Gradient Networks*
Jack Richter-Powell, Jonathan Lorraine, and **Brandon Amos**
NeurIPS OTML Workshop 2021
45. *Imitation Learning from Pixel Observations for Continuous Control*
Samuel Cohen, **Brandon Amos**, Marc Peter Deisenroth, Mikael Henaff, Eugene Vinitsky, and Denis Yarats
NeurIPS DeepRL Workshop 2021
46. *MBRL-Lib: A Modular Library for Model-based Reinforcement Learning* [code](#)
Luis Pineda, **Brandon Amos**, Amy Zhang, Nathan Lambert, and Roberto Calandra
arXiv 2021

2020.....

47. *The Differentiable Cross-Entropy Method* [code](#) [slides](#)
Brandon Amos and Denis Yarats
ICML 2020
48. *Objective Mismatch in Model-based Reinforcement Learning*
Nathan Lambert, **Brandon Amos**, Omry Yadan, and Roberto Calandra
L4DC 2020

49. *QNSTOP: Quasi-Newton Algorithm for Stochastic Optimization* code
Brandon Amos, David Easterling, Layne T. Watson, William Thacker, Brent Castle, and Michael Trosset
ACM TOMS 2020
50. *Neural Potts Model*
Tom Sercu, Robert Verkuil, Joshua Meier, **Brandon Amos**, Zeming Lin, Caroline Chen, Jason Liu, Yann LeCun, and Alexander Rives
MLCB 2020
51. *Deep Riemannian Manifold Learning*
Aaron Lou, Maximilian Nickel, and **Brandon Amos**
NeurIPS Geo4dI Workshop 2020

2019.....

52. *Differentiable Optimization-Based Modeling for Machine Learning* code
Brandon Amos
Ph.D. Thesis 2019
53. *Differentiable Convex Optimization Layers* code
Akshay Agrawal*, **Brandon Amos***, Shane Barratt*, Stephen Boyd*, Steven Diamond*, and J. Zico Kolter*
NeurIPS 2019
54. *The Limited Multi-Label Projection Layer* code
Brandon Amos, Vladlen Koltun, and J. Zico Kolter
arXiv 2019
55. *Generalized Inner Loop Meta-Learning* code
Edward Grefenstette, **Brandon Amos**, Denis Yarats, Phu Mon Htut, Artem Molchanov, Franziska Meier, Douwe Kiela, Kyunghyun Cho, and Soumith Chintala
arXiv 2019

2018.....

56. *Learning Awareness Models*
Brandon Amos, Laurent Dinh, Serkan Cabi, Thomas Rothörl, Sergio Gómez Colmenarejo, Alistair Muldal, Tom Erez, Yuval Tassa, Nando de Freitas, and Misha Denil
ICLR 2018
57. *Differentiable MPC for End-to-end Planning and Control* code
Brandon Amos, Ivan Dario Jimenez Rodriguez, Jacob Sacks, Byron Boots, and J. Zico Kolter
NeurIPS 2018
58. *Depth-Limited Solving for Imperfect-Information Games*
Noam Brown, Tuomas Sandholm, and **Brandon Amos**
NeurIPS 2018
59. *Enabling Live Video Analytics with a Scalable and Privacy-Aware Framework*
Junjue Wang, **Brandon Amos**, Anupam Das, Padmanabhan Pillai, Norman Sadeh, and Mahadev Satyanarayanan
ACM TOMM 2018

2017.....

- 60. *OptNet: Differentiable Optimization as a Layer in Neural Networks* [code](#) [slides](#)
Brandon Amos and J. Zico Kolter
ICML 2017
- 61. *Input Convex Neural Networks* [code](#) [slides](#)
Brandon Amos, Lei Xu, and J. Zico Kolter
ICML 2017
- 62. *Task-based End-to-end Model Learning* [code](#)
Priya L. Donti, **Brandon Amos**, and J. Zico Kolter
NeurIPS 2017
- 63. *Quasi-Newton Stochastic Optimization Algorithm for Parameter Estimation of a Stochastic Model of the Budding Yeast Cell Cycle*
Minghan Chen, **Brandon Amos**, Layne T. Watson, John Tyson, Yang Cao, Cliff Shaffer, Michael Trosset, Cihan Oguz, and Gisella Kakoti
IEEE/ACM TCBB 2017
- 64. *You can teach elephants to dance: agile VM handoff for edge computing*
Kiryong Ha, Yoshihisa Abe, Thomas Eiszler, Zhuo Chen, Wenlu Hu, **Brandon Amos**, Rohit Upadhyaya, Padmanabhan Pillai, and Mahadev Satyanarayanan
SEC 2017
- 65. *An Empirical Study of Latency in an Emerging Class of Edge Computing Applications for Wearable Cognitive Assistance*
Zhuo Chen, Wenlu Hu, Junjue Wang, Siyan Zhao, **Brandon Amos**, Guanhong Wu, Kiryong Ha, Khalid Elgazzar, Padmanabhan Pillai, Roberta Klatzky, Daniel Siewiorek, and Mahadev Satyanarayanan
SEC 2017
- 66. *A Scalable and Privacy-Aware IoT Service for Live Video Analytics* [code](#)
Junjue Wang, **Brandon Amos**, Anupam Das, Padmanabhan Pillai, Norman Sadeh, and Mahadev Satyanarayanan
ACM MMSys 2017 (Best Paper)

2016.....

- 67. *OpenFace: A general-purpose face recognition library with mobile applications* [code](#)
Brandon Amos, Bartosz Ludwiczuk, and Mahadev Satyanarayanan
CMU 2016
- 68. *Image Completion with Deep Learning in TensorFlow* [code](#)
Brandon Amos
Blog 2016
- 69. *Collapsed Variational Inference for Sum-Product Networks*
Han Zhao, Tameem Adel, Geoff Gordon, and **Brandon Amos**
ICML 2016
- 70. *Quantifying the impact of edge computing on mobile applications*
Wenlu Hu, Ying Gao, Kiryong Ha, Junjue Wang, **Brandon Amos**, Zhuo Chen, Padmanabhan Pillai, and Mahadev Satyanarayanan
ACM SIGOPS 2016

71. *Privacy mediators: helping IoT cross the chasm*
Nigel Davies, Nina Taft, Mahadev Satyanarayanan, Sarah Clinch, and **Brandon Amos**
HotMobile 2016
- 2015 and earlier.....
72. *Edge Analytics in the Internet of Things*
Mahadev Satyanarayanan, Pieter Simoens, Yu Xiao, Padmanabhan Pillai, Zhuo Chen, Kiryong Ha, Wenlu Hu, and **Brandon Amos**
IEEE Pervasive Computing 2015
73. *Bad Parts: Are Our Manufacturing Systems at Risk of Silent Cyberattacks?*
Hamilton Turner, Jules White, Jaime A. Camelio, Christopher Williams, **Brandon Amos**, and Robert Parker
IEEE Security & Privacy 2015
74. *Early Implementation Experience with Wearable Cognitive Assistance Applications*
Zhuo Chen, Lu Jiang, Wenlu Hu, Kiryong Ha, **Brandon Amos**, Padmanabhan Pillai, Alex Hauptmann, and Mahadev Satyanarayanan
WearSys 2015
75. *The Case for Offload Shaping*
Wenlu Hu, **Brandon Amos**, Zhuo Chen, Kiryong Ha, Wolfgang Richter, Padmanabhan Pillai, Benjamin Gilbert, Jan Harkes, and Mahadev Satyanarayanan
HotMobile 2015
76. *Are Cloudlets Necessary?*
Ying Gao, Wenlu Hu, Kiryong Ha, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan
CMU 2015
77. *Adaptive VM handoff across cloudlets*
Kiryong Ha, Yoshihisa Abe, Zhuo Chen, Wenlu Hu, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan
CMU 2015
78. *Global Parameter Estimation for a Eukaryotic Cell Cycle Model in Systems Biology*
Tricity Andrew, **Brandon Amos**, David Easterling, Cihan Oguz, William Baumann, John Tyson, and Layne T. Watson
SummerSim 2014
79. *Applying machine learning classifiers to dynamic Android malware detection at scale* code
Brandon Amos, Hamilton Turner, and Jules White
IWCMC 2013

Open Source Repositories

39.3k+ GitHub stars across all repositories.

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|--|------|
| 1. oripress/AlgoTune ★89 | 2025 |
| 2. facebookresearch/adjoint_sampling ★130 | 2025 |
| 3. facebookresearch/oni ★45 <i>Online LLM intrinsic rewards for NetHack</i> | 2025 |
| 4. facebookresearch/advprompter ★177 <i>Fast Adaptive Adversarial Prompting for LLMs</i> | 2024 |
| 5. facebookresearch/lagrangian-ot ★61 | 2024 |
| 6. lazaratan/meta-flow-matching ★71 | 2024 |
| 7. facebookresearch/soc-matching ★39 <i>Stochastic Optimal Control Matching</i> | 2024 |

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| 8. kuleshov/cornell-cs5785-2024-applied-ml ★526 <i>Slides for our applied ML course</i> | 2024 |
| 9. facebookresearch/amortized-optimization-tutorial ★248 | 2023 |
| 10. facebookresearch/taskmet ★20 <i>Task-Driven Metric Learning for Model Learning</i> | 2023 |
| 11. facebookresearch/w2ot ★46 <i>Wasserstein-2 optimal transport</i> | 2023 |
| 12. facebookresearch/LANCER ★38 <i>Landscape Surrogate Learning Decision Losses</i> | 2023 |
| 13. facebookresearch/theseus ★2k <i>Differentiable non-linear optimization library</i> | 2022 |
| 14. facebookresearch/meta-ot ★107 | 2022 |
| 15. bamos/presentations ★141 | 2022 |
| 16. facebookresearch/gwil ★25 <i>Gromov-Wasserstein Cross Domain Imitation Learning</i> | 2022 |
| 17. facebookresearch/nocturne ★295 <i>A partially-observable multi-agent driving simulator</i> | 2022 |
| 18. facebookresearch/rcpm ★67 <i>Riemannian Convex Potential Maps</i> | 2021 |
| 19. facebookresearch/svg ★57 <i>Model-based stochastic value gradient</i> | 2021 |
| 20. facebookresearch/mbrl-lib ★1k <i>Model-based reinforcement learning library</i> | 2021 |
| 21. martius-lab/CombOptNet ★73 | 2021 |
| 22. samcohen16/Aligning-Time-Series ★51 <i>Aligning time series on incomparable spaces</i> | 2021 |
| 23. facebookresearch/neural_stpp ★107 <i>Neural Spatio-Temporal Point Processes</i> | 2021 |
| 24. facebookresearch/neural-scs ★29 <i>Neural Fixed-Point Acceleration for SCS</i> | 2021 |
| 25. rtqichen/torchdiffeq ★6.3k <i>PyTorch Differentiable ODE Solvers (differentiable event handling)</i> | 2021 |
| 26. facebookresearch/dcem ★124 <i>The Differentiable Cross-Entropy Method</i> | 2020 |
| 27. facebookresearch/higher ★1.6k <i>PyTorch higher-order gradient and optimization library</i> | 2019 |
| 28. bamos/thesis ★347 <i>Ph.D. Thesis LaTeX source code</i> | 2019 |
| 29. cvxgrp/cvxpylayers ★2.1k <i>Differentiable Convex Optimization Layers</i> | 2019 |
| 30. locuslab/lml ★59 <i>The Limited Multi-Label Projection Layer</i> | 2019 |
| 31. locuslab/mpc.pytorch ★1k <i>Differentiable PyTorch Model Predictive Control library</i> | 2018 |
| 32. locuslab/differentiable-mpc ★318 | 2018 |
| 33. locuslab/icnn ★312 <i>Input Convex Neural Network experiments</i> | 2017 |
| 34. locuslab/optnet ★576 | 2017 |
| 35. locuslab/qpth ★779 <i>Differentiable PyTorch QP solver</i> | 2017 |
| 36. bamos/densenet.pytorch ★842 | 2017 |
| 37. bamos/block ★311 <i>Intelligent block matrix constructions</i> | 2017 |
| 38. bamos/setGPU ★111 <i>Automatically use the least-loaded GPU</i> | 2017 |
| 39. bamos/dcgan-completion.tensorflow ★1.3k <i>Image completion with GANs</i> | 2016 |
| 40. cmusatyalab/openface ★15.4k <i>Face recognition with deep neural networks</i> | 2015 |
| 41. bamos/girl ★71 <i>GitHub README link checker</i> | 2015 |
| 42. bamos/conference-tracker ★71 | 2015 |
| 43. vtopt/qnstop ★11 <i>Fortran quasi-Newton stochastic optimization library</i> | 2014 |
| 44. bamos/snowglobe ★28 <i>Haskell-driven, self-hosted web analytics</i> | 2014 |
| 45. bamos/zsh-history-analysis ★241 | 2014 |
| 46. bamos/beamer-snippets ★111 | 2014 |
| 47. bamos/latex-templates ★369 | 2013 |
| 48. cparse/cparse ★361 <i>C++ expression parser using Dijkstra's shunting-yard algorithm</i> | 2013 |
| 49. bamos/cv ★419 <i>Source for this CV: creates LaTeX/Markdown from YAML/BibTeX</i> | 2013 |
| 50. bamos/parsec-benchmark ★131 <i>PARSEC benchmark support for Arch Linux</i> | 2013 |
| 51. bamos/python-scripts ★195 | 2013 |
| 52. bamos/reading-list ★186 <i>YAML reading list and notes system</i> | 2013 |
| 53. bamos/dotfiles ★237 ♥ <i>Linux, xmonad, emacs, vim, zsh, tmux</i> | 2012 |

Invited Talks

Slides for my major presentations are available [here](#) under a CC-BY license.

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| 1. <i>On prompt optimization and coding agents</i> • Princeton PLI | 2026 |
| 2. <i>On prompt optimization and coding agents</i> • Netflix | 2026 |
| 3. <i>On prompt optimization and coding agents</i> • NeurIPS ScaleOPT Workshop | 2025 |
| 4. <i>Language model alignment and tool use</i> • Cornell Tech CS5785 Guest Lecture | 2025 |
| 5. <i>On transport, flows, and physics</i> • The Physics of John Hopfield Workshop at Princeton University | 2025 |
| 6. <i>Demystifying language models</i> • ICT Dumaguete Seminar | 2025 |
| 7. <i>On prompt optimization and coding agents</i> • Flatiron ML Seminar | 2025 |
| 8. <i>AdvPrompter: Fast Adaptive Adversarial Prompting for LLMs</i> • USC | 2025 |
| 9. <i>On amortized optimization for RL, Bayesian optimization, and biology</i> • ai4b.io | 2025 |
| 10. <i>Transport and flows between distributions over distributions</i> • Columbia University | 2025 |
| 11. <i>Transport and flows between distributions over distributions</i> • Genesis Therapeutics | 2024 |
| 12. <i>Transport and flows between distributions over distributions</i> • UT Austin | 2024 |
| 13. <i>On LLM prompt optimization and amortization</i> • Dagstuhl Seminar on ML for CO | 2024 |
| 14. <i>Amortized optimization for optimal transport and LLM attacks</i> • ISMP | 2024 |
| 15. <i>Differentiable optimization for robotics</i> • RSS Optimization for Robotics Workshop | 2024 |
| 16. <i>Amortized optimization-based reasoning for AI</i> • University of Amsterdam | 2024 |
| 17. <i>End-to-end learning geometries for graphs, dynamical systems, and regression</i> • LoG New York | 2024 |
| 18. <i>Amortized optimization for optimal transport</i> • NeurIPS Optimal Transport and ML Workshop | 2023 |
| 19. <i>On optimal control and machine learning</i> • ICML Control and Dynamical Systems Workshop | 2023 |
| 20. <i>Tutorial on amortized optimization</i> • Brown University | 2023 |
| 21. <i>Learning with differentiable and amortized optimization</i> • NYU AI Seminar | 2023 |
| 22. <i>Learning with differentiable and amortized optimization</i> • Vanderbilt ML Seminar | 2023 |
| 23. <i>Learning with differentiable and amortized optimization</i> • Microsoft Research | 2022 |
| 24. <i>Amortized optimization for computing optimal transport maps</i> • Flatiron Workshop | 2022 |
| 25. <i>Learning with differentiable and amortized optimization</i> • Cornell AI Seminar | 2022 |
| 26. <i>Learning with differentiable and amortized optimization</i> • Cornell Tech Seminar | 2022 |
| 27. <i>Learning with differentiable and amortized optimization</i> • Argonne National Laboratory | 2022 |
| 28. <i>Theseus: A library for differentiable nonlinear optimization</i> • NYU | 2022 |
| 29. <i>Theseus: A library for differentiable nonlinear optimization</i> • University of Zurich | 2022 |
| 30. <i>Differentiable optimization-based modeling for machine learning</i> • Colorado Mines AMS Colloquium | 2022 |
| 31. <i>Differentiable optimization</i> • IJCAI Tutorial | 2022 |
| 32. <i>Differentiable optimization for control and RL</i> • ICML Workshop on Decision Awareness in RL | 2022 |
| 33. <i>Differentiable optimization-based modeling for machine learning</i> • CPAIOR Master Class | 2022 |
| 34. <i>Tutorial on amortized optimization</i> • ICCOPT | 2022 |
| 35. <i>Differentiable optimization for control and RL</i> • Gridmatic | 2022 |
| 36. <i>Learning for control with differentiable optimization and ODEs</i> • Columbia University | 2021 |
| 37. <i>Differentiable optimization-based modeling for machine learning</i> • IBM Research | 2021 |
| 38. <i>Differentiable optimization for control</i> • Max Planck Institute (Tübingen) | 2020 |
| 39. <i>Differentiable optimization-based modeling for machine learning</i> • Mila Seminar | 2020 |
| 40. <i>Deep Declarative Networks</i> • ECCV Tutorial | 2020 |
| 41. <i>On differentiable optimization for control and vision</i> • CVPR Deep Declarative Networks Workshop | 2020 |
| 42. <i>Differentiable optimization-based modeling for machine learning</i> • Caltech CS159 Guest Lecture | 2020 |
| 43. <i>Unrolled optimization for learning deep energy models</i> • SIAM MDS Minisymposium | 2020 |
| 44. <i>Differentiable optimization-based modeling for machine learning</i> • NYU CILVR Seminar | 2019 |
| 45. <i>Differentiable optimization-based modeling for machine learning</i> • INFORMS | 2019 |
| 46. <i>Differentiable optimization-based modeling for machine learning</i> • Facebook AI Research | 2019 |
| 47. <i>Differentiable optimization-based modeling for machine learning</i> • ISMP | 2018 |
| 48. <i>Differentiable optimization-based modeling for machine learning</i> • Google Brain | 2018 |
| 49. <i>Differentiable optimization-based modeling for machine learning</i> • Bosch Center for AI | 2018 |
| 50. <i>Differentiable optimization-based modeling for machine learning</i> • Waymo Research | 2018 |
| 51. <i>Differentiable optimization-based modeling for machine learning</i> • Tesla AI | 2018 |

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| 52. <i>Differentiable optimization-based modeling for machine learning</i> • NVIDIA Robotics | 2018 |
| 53. <i>Differentiable optimization-based modeling for machine learning</i> • Salesforce Research | 2018 |
| 54. <i>Differentiable optimization-based modeling for machine learning</i> • OpenAI | 2018 |
| 55. <i>Differentiable optimization-based modeling for machine learning</i> • NNAISENSE | 2018 |
| 56. <i>Differentiable optimization and control</i> • UC Berkeley | 2018 |

Interns and Students

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|--|-----------|
| Kathy Zhou (visiting FAIR from NYU) | 2025 |
| Ulyana Piterbarg (visiting FAIR from NYU) | 2025 |
| Ollie Liu (visiting FAIR from USC) | 2025 |
| Doron Haviv (MSKCC PhD committee, now at Genentech) | 2025 |
| Aaron Havens (visiting FAIR from UIUC, now postdoc at FAIR) | 2024–2025 |
| Aram-Alexandre Pooladian (visiting FAIR from NYU, now at Yale) | 2022–2024 |
| Carles Domingo-Enrich (visiting FAIR from NYU, now at MSR) | 2022–2024 |
| Anselm Paulus (visiting FAIR from Max Planck Institute, Tübingen) | 2023–2024 |
| Matthew Retchin (Columbia MS thesis committee, now at Harvard) | 2023 |
| Sanae Lotfi (visiting FAIR from NYU, now scientist at FAIR) | 2022–2023 |
| Dishank Bansal (AI resident at FAIR, now at the UK AI Safety Institute) | 2022–2023 |
| Arnaud Fickinger (visiting FAIR from Berkeley) | 2021–2022 |
| Aaron Lou (visiting FAIR from Cornell and Stanford, now scientist at OpenAI) | 2020–2022 |
| Eugene Vinitsky (visiting FAIR from Berkeley, now professor at NYU) | 2021–2022 |
| Samuel Cohen (visiting FAIR from UCL, now CEO at FairGen) | 2021–2022 |
| Ricky Chen (visiting FAIR from Toronto, now scientist at FAIR) | 2020 |
| Paul Liang (visiting FAIR from CMU, now professor at MIT) | 2020 |
| Phillip Wang (at CMU, now CEO at Gather) | 2018 |

Professional Activities

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| NeurIPS Learning Meets Combinatorial Optimization Workshop Organizer | 2020 |
| CVPR Deep Declarative Networks Workshop Organizer | 2020 |
| ECCV Deep Declarative Networks Tutorial Organizer | 2020 |
| CMU CSD MS Admissions | 2014–2015 |

Area Chair.....

Artificial Intelligence and Statistics (AISTATS)
Association for the Advancement of Artificial Intelligence (AAAI)
International Conference on Learning Representations (ICLR)
International Conference on Machine Learning (ICML)
Neural Information Processing Systems (NeurIPS)
Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks

Reviewer.....

American Controls Conference (ACC)
Artificial Intelligence and Statistics (AISTATS)
Association for the Advancement of Artificial Intelligence (AAAI)
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
IEEE Conference on Decision and Control (CDC)
IEEE Control Systems Letters (L-CSS)

IEEE International Conference on Computer Vision (ICCV)
 IEEE International Conference on Intelligent Robots and Systems (IROS)
 IEEE International Conference on Robotics and Automation (ICRA)
 International Conference on Learning Representations (ICLR)
 International Conference on Learning Representations (ICLR) Blog Posts
 International Conference on Machine Learning (ICML)
 International Conference on Machine Learning (ICML) SODS Workshop
 International Conference on the Constraint Programming, AI, and Operations Research (CPAIOR)
 Journal of Machine Learning Research (JMLR)
 Learning for Dynamics and Control (L4DC)
 Mathematical Programming Computation (MPC)
 Neural Information Processing Systems (NeurIPS)
 Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track
 Neural Information Processing Systems (NeurIPS) Deep RL Workshop
 Neural Information Processing Systems (NeurIPS) DiffCVGP Workshop
 Neural Information Processing Systems (NeurIPS) OPT Workshop
 Optimization Letters
 Transactions on Machine Learning Research (TMLR)
 Uncertainty in Artificial Intelligence (UAI)

Teaching

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|--|-------|
| Applied Machine Learning , <i>Cornell Tech CS5785</i> , Co-instructor | F2024 |
| Graduate AI , <i>CMU 15-780</i> , TA | S2017 |
| Distributed Systems , <i>CMU 15-640</i> , TA | S2016 |
| Software Design and Data Structures , <i>VT CS2114</i> , TA | S2013 |

Skills

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|--------------------|--|
| Programming | C, C++, Fortran, Haskell, Java, Lua, Make, Mathematica, Python, R, Scala |
| Frameworks | JAX, NumPy, Pandas, PyTorch, SciPy, TensorFlow, Torch7 |
| Toolbox | Linux, emacs, vim, evil, org, mu4e, xmonad, git, tmux, zsh |