

# Brandon Amos

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## Current Positions

Research Scientist, *Meta, Fundamental AI Research (FAIR)*, New York City 2019 – Present

## Education

Ph.D. in Computer Science, *Carnegie Mellon University* (0.00/0.00) 2014 – 2019

Thesis: *Differentiable Optimization-Based Modeling for Machine Learning*

Advisor: [J. Zico Kolter](#)

B.S. in Computer Science, *Virginia Tech* (3.99/4.00) 2011 – 2014

## Previous Positions

Visiting Lecturer, *Cornell Tech*, New York City 2024

Research Assistant, *Carnegie Mellon University* (with [J. Zico Kolter](#) on ML and optimization) 2016 – 2019

Research Intern, *Intel Labs*, Santa Clara (with [Vladlen Koltun](#) on computer vision) 2018

Research Intern, *Google DeepMind*, London (with [Nando de Freitas](#) and [Misha Denil](#) on RL) 2017

Research Assistant, *Carnegie Mellon University* (with [Mahadev Satyanarayanan](#) on mobile systems) 2014 – 2016

Research Intern, *Adobe Research*, San Jose (with [David Tompkins](#) on distributed systems) 2014

Research Assistant, *Virginia Tech* (with [Layne Watson](#) and [David Easterling](#) on optimization) 2013 – 2014

Research Assistant, *Virginia Tech* (with [Jules White](#) and [Hamilton Turner](#) on mobile systems) 2012 – 2014

Research Assistant, *Virginia Tech* (with [Binoy Ravindran](#) and [Alastair Murray](#) on compilers) 2012 – 2014

Software Intern, *Snowplow* (Scala development) 2013 – 2014

Software Intern, *Qualcomm*, San Diego (Python and C++ development) 2013

Software Intern, *Phoenix Integration*, Virginia (C++, C#, and Java development) 2012

Network Administrator Intern, *Sunapsys*, Virginia 2011

## Honors & Awards

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: 10.4k+ citations and an h-index of 40]

Selected publications I am a primary author on are **highlighted**.

2025.....

1. *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

2. *AdvPrompter: Fast Adaptive Adversarial Prompting for LLMs* [code] [slides]  
Anselm Paulus\*, Arman Zharmagambetov\*, Chuan Guo, **Brandon Amos**<sup>†</sup>, and Yuandong Tian<sup>†</sup>  
ICML 2025
3. *Wasserstein Flow Matching: Generative modeling over families of distributions* [code]  
Doron Haviv, Aram-Alexandre Pooladian, Dana Pe'er, and **Brandon Amos**  
ICML 2025
4. *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
5. *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
6. *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
7. *Cultivating Pluralism In Algorithmic Monoculture: The Community Alignment Dataset*  
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  
ICML MoFA Workshop 2025
8. *AlgoTune: Can Language Models Speed Up General-Purpose Numerical Programs?*  
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-Piñero, Alberto Mercurio, Ni Zhan, Talor Abramovich, Kilian Lieret, Hanlin Zhang, Shirley Huang, Matthias Bethge, and Ofir Press  
preprint 2025

2024.....

9. *Neural Optimal Transport with Lagrangian Costs* [code]  
Aram-Alexandre Pooladian, Carles Domingo-Enrich, Ricky T. Q. Chen, and **Brandon Amos**  
UAI 2024
10. *Learning to Warm-Start Fixed-Point Optimization Algorithms* [code]  
Rajiv Sambharya, Georgina Hall, **Brandon Amos**, and Bartolomeo Stellato  
JMLR 2024
11. *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
12. *Stochastic Optimal Control Matching* [code]  
Carles Domingo-Enrich, Jiequn Han, **Brandon Amos**, Joan Bruna, and Ricky T. Q. Chen  
NeurIPS 2024

13. *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
  14. *Score Function Gradient Estimation to Widen the Applicability of Decision-Focused Learning*  
Mattia Silvestri, Senne Berden, Jayanta Mandi, Ali İrfan Mahmutoğulları, **Brandon Amos**, Tias Guns, and Michele Lombardi  
arXiv 2024
  15. *AdvPrefix: An Objective for Nuanced LLM Jailbreaks*  
Sicheng Zhu, **Brandon Amos**, Yuandong Tian, Chuan Guo, and Ivan Evtimov  
arXiv 2024
- 2023.....
16. *Tutorial on amortized optimization* [code]  
**Brandon Amos**  
Foundations and Trends in Machine Learning 2023
  17. *On amortizing convex conjugates for optimal transport* [code]  
**Brandon Amos**  
ICLR 2023
  18. *End-to-End Learning to Warm-Start for Real-Time Quadratic Optimization* [code]  
Rajiv Sambharya, Georgina Hall, **Brandon Amos**, and Bartolomeo Stellato  
L4DC 2023
  19. *Meta Optimal Transport* [code]  
**Brandon Amos**, Samuel Cohen, Giulia Luise, and Ievgen Redko  
ICML 2023
  20. *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
  21. *Semi-Supervised Offline Reinforcement Learning with Action-Free Trajectories*  
Qinqing Zheng, Mikael Henaff, **Brandon Amos**, and Aditya Grover  
ICML 2023
  22. *TaskMet: Task-Driven Metric Learning for Model Learning* [code]  
Dishank Bansal, Ricky T. Q. Chen, Mustafa Mukadam, and **Brandon Amos**  
NeurIPS 2023
  23. *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
  24. *Koopman Constrained Policy Optimization: A Koopman operator theoretic method for differentiable optimal control in robotics*  
Matthew Retchin, **Brandon Amos**, Steven Brunton, and Shuran Song  
ICML Differentiable Almost Everything Workshop 2023

2022.....

25. *Cross-Domain Imitation Learning via Optimal Transport* [code]  
Arnaud Fickinger, Samuel Cohen, Stuart Russell, and **Brandon Amos**  
ICLR 2022
26. *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
27. *Semi-Discrete Normalizing Flows through Differentiable Tessellation*  
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel  
NeurIPS 2022
28. *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
29. *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.....

30. *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)
31. *Riemannian Convex Potential Maps* [code] [slides]  
Samuel Cohen\*, **Brandon Amos\***, and Yaron Lipman  
ICML 2021
32. *CombOptNet: Fit the Right NP-Hard Problem by Learning Integer Programming Constraints* [code]  
Anselm Paulus, Michal Rolínek, Vit Musil, **Brandon Amos**, and Georg Martius  
ICML 2021
33. *Scalable Online Planning via Reinforcement Learning Fine-Tuning*  
Arnaud Fickinger, Hengyuan Hu, **Brandon Amos**, Stuart Russell, and Noam Brown  
NeurIPS 2021
34. *Aligning Time Series on Incomparable Spaces* [code] [slides]  
Samuel Cohen, Giulia Luise, Alexander Terenin, **Brandon Amos**, and Marc Peter Deisenroth  
AISTATS 2021
35. *Learning Neural Event Functions for Ordinary Differential Equations* [code]  
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel  
ICLR 2021
36. *Neural Spatio-Temporal Point Processes* [code]  
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel  
ICLR 2021

37. *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
38. *Neural Fixed-Point Acceleration for Convex Optimization* [code]  
Shobha Venkataraman\* and **Brandon Amos\***  
ICML AutoML Workshop 2021
39. *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
40. *Input Convex Gradient Networks*  
Jack Richter-Powell, Jonathan Lorraine, and **Brandon Amos**  
NeurIPS OTML Workshop 2021
41. *Imitation Learning from Pixel Observations for Continuous Control*  
Samuel Cohen, **Brandon Amos**, Marc Peter Deisenroth, Mikael Henaff, Eugene Vinitzky, and Denis Yarats  
NeurIPS DeepRL Workshop 2021
42. *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.....

43. *The Differentiable Cross-Entropy Method* [code] [slides]  
**Brandon Amos** and Denis Yarats  
ICML 2020
44. *Objective Mismatch in Model-based Reinforcement Learning*  
Nathan Lambert, **Brandon Amos**, Omry Yadan, and Roberto Calandra  
L4DC 2020
45. *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
46. *Neural Potts Model*  
Tom Sercu, Robert Verkuil, Joshua Meier, **Brandon Amos**, Zeming Lin, Caroline Chen, Jason Liu, Yann LeCun, and Alexander Rives  
MLCB 2020
47. *Deep Riemannian Manifold Learning*  
Aaron Lou, Maximilian Nickel, and **Brandon Amos**  
NeurIPS Geo4dl Workshop 2020

## 2019.....

48. *Differentiable Optimization-Based Modeling for Machine Learning* [code]  
**Brandon Amos**  
Ph.D. Thesis 2019

49. *Differentiable Convex Optimization Layers* [code]  
Akshay Agrawal\*, **Brandon Amos\***, Shane Barratt\*, Stephen Boyd\*, Steven Diamond\*, and J. Zico Kolter\*  
NeurIPS 2019
50. *The Limited Multi-Label Projection Layer* [code]  
**Brandon Amos**, Vladlen Koltun, and J. Zico Kolter  
arXiv 2019
51. *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.....

52. *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
53. *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
54. *Depth-Limited Solving for Imperfect-Information Games*  
Noam Brown, Tuomas Sandholm, and **Brandon Amos**  
NeurIPS 2018
55. *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.....

56. *OptNet: Differentiable Optimization as a Layer in Neural Networks* [code] [slides]  
**Brandon Amos** and J. Zico Kolter  
ICML 2017
57. *Input Convex Neural Networks* [code] [slides]  
**Brandon Amos**, Lei Xu, and J. Zico Kolter  
ICML 2017
58. *Task-based End-to-end Model Learning* [code]  
Priya L. Donti, **Brandon Amos**, and J. Zico Kolter  
NeurIPS 2017
59. *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

60. *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
61. *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
62. *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.....

63. *OpenFace: A general-purpose face recognition library with mobile applications* [code]  
**Brandon Amos**, Bartosz Ludwiczuk, and Mahadev Satyanarayanan  
CMU 2016
64. *Collapsed Variational Inference for Sum-Product Networks*  
Han Zhao, Tameem Adel, Geoff Gordon, and **Brandon Amos**  
ICML 2016
65. *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
66. *Privacy mediators: helping IoT cross the chasm*  
Nigel Davies, Nina Taft, Mahadev Satyanarayanan, Sarah Clinch, and **Brandon Amos**  
HotMobile 2016

## 2015 and earlier.....

67. *Edge Analytics in the Internet of Things*  
Mahadev Satyanarayanan, Pieter Simoons, Yu Xiao, Padmanabhan Pillai, Zhuo Chen, Kiryong Ha, Wenlu Hu, and **Brandon Amos**  
IEEE Pervasive Computing 2015
68. *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
69. *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
70. *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



71. [Are Cloudlets Necessary?](#)  
Ying Gao, Wenlu Hu, Kiryong Ha, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan  
CMU 2015
72. [Adaptive VM handoff across cloudlets](#)  
Kiryong Ha, Yoshihisa Abe, Zhuo Chen, Wenlu Hu, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan  
CMU 2015
73. [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
74. [Applying machine learning classifiers to dynamic Android malware detection at scale](#) [code]  
**Brandon Amos**, Hamilton Turner, and Jules White  
IWCMC 2013

## Open Source Repositories

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38.1k+ GitHub stars across all repositories.

- |  |      |
|--|------|
| 1. <a href="#">facebookresearch/adjoint_sampling</a>   ★101   <i>Adjoint Sampling</i>                                      | 2025 |
| 2. <a href="#">facebookresearch/oni</a>   ★37   <i>Online LLM intrinsic rewards for NetHack</i>                            | 2024 |
| 3. <a href="#">facebookresearch/advprompter</a>   ★156   <i>Fast Adaptive Adversarial Prompting for LLMs</i>               | 2024 |
| 4. <a href="#">facebookresearch/lagrangian-ot</a>   ★56   <i>Lagrangian Optimal Transport</i>                              | 2024 |
| 5. <a href="#">lazaratan/meta-flow-matching</a>   ★55   <i>Meta Flow Matching</i>  | 2024 |
| 6. <a href="#">facebookresearch/soc-matching</a>   ★35   <i>Stochastic Optimal Control Matching</i>                        | 2024 |
| 7. <a href="#">kuleshov/cornell-cs5785-2024-applied-ml</a>   ★487   <i>Slides for our applied ML course</i>                | 2024 |
| 8. <a href="#">facebookresearch/amortized-optimization-tutorial</a>   ★242   <i>Tutorial on amortized optimization</i>     | 2023 |
| 9. <a href="#">facebookresearch/taskmet</a>   ★19   <i>TaskMet: Task-Driven Metric Learning for Model Learning</i>         | 2023 |
| 10. <a href="#">facebookresearch/w2ot</a>   ★47   <i>Wasserstein-2 optimal transport in JAX</i>                            | 2023 |
| 11. <a href="#">facebookresearch/LANCER</a>   ★36   <i>Landscape Surrogate Learning Decision Losses</i>                    | 2023 |
| 12. <a href="#">facebookresearch/theseus</a>   ★1.9k   <i>Differentiable non-linear optimization library</i>               | 2022 |
| 13. <a href="#">facebookresearch/meta-ot</a>   ★102   <i>Meta Optimal Transport</i>  | 2022 |
| 14. <a href="#">bamos/presentations</a>   ★145   <i>Source for my major presentations</i>                                  | 2022 |
| 15. <a href="#">facebookresearch/gwil</a>   ★25   <i>Gromov-Wasserstein Cross Domain Imitation Learning</i>                | 2022 |
| 16. <a href="#">facebookresearch/nocturne</a>   ★282   <i>A partially-observable multi-agent driving simulator</i>         | 2022 |
| 17. <a href="#">facebookresearch/rcpm</a>   ★67   <i>Riemannian Convex Potential Maps</i>                                  | 2021 |
| 18. <a href="#">facebookresearch/svg</a>   ★55   <i>Model-based stochastic value gradient</i>                              | 2021 |
| 19. <a href="#">facebookresearch/mbri-lib</a>   ★999   <i>Model-based reinforcement learning library</i>                   | 2021 |
| 20. <a href="#">martius-lab/CombOptNet</a>   ★73   <i>Combinatorial OptNet</i>   | 2021 |
| 21. <a href="#">samcohen16/Aligning-Time-Series</a>   ★51   <i>Aligning time series on incomparable spaces</i>             | 2021 |
| 22. <a href="#">facebookresearch/neural_stpp</a>   ★105   <i>Neural Spatio-Temporal Point Processes</i>                    | 2021 |
| 23. <a href="#">facebookresearch/neural-scs</a>   ★29   <i>Neural Fixed-Point Acceleration for SCS</i>                     | 2021 |
| 24. <a href="#">rtqichen/torchdiffeq</a>   ★6k   <i>PyTorch Differentiable ODE Solvers (differentiable event handling)</i> | 2021 |
| 25. <a href="#">facebookresearch/dcem</a>   ★126   <i>The Differentiable Cross-Entropy Method</i>                          | 2020 |
| 26. <a href="#">facebookresearch/higher</a>   ★1.6k   <i>PyTorch higher-order gradient and optimization library</i>        | 2019 |
| 27. <a href="#">bamos/thesis</a>   ★337   <i>Ph.D. Thesis LaTeX source code</i>  | 2019 |
| 28. <a href="#">cvxgrp/cvxpylayers</a>   ★1.9k   <i>Differentiable Convex Optimization Layers</i>                          | 2019 |
| 29. <a href="#">locuslab/lml</a>   ★58   <i>The Limited Multi-Label Projection Layer</i>                                   | 2019 |
| 30. <a href="#">locuslab/mpc.pytorch</a>   ★952   <i>Differentiable PyTorch Model Predictive Control library</i>           | 2018 |
| 31. <a href="#">locuslab/differentiable-mpc</a>   ★283   <i>Differentiable MPC experiments</i>                             | 2018 |



32. <a href="#">locuslab/icnn</a>   ★292   <i>Input Convex Neural Network experiments</i>	2017
33. <a href="#">locuslab/optnet</a>   ★536   <i>OptNet experiments</i>	2017
34. <a href="#">locuslab/qpth</a>   ★720   <i>Differentiable PyTorch QP solver</i>	2017
35. <a href="#">bamos/densenet.pytorch</a>   ★841   <i>PyTorch DenseNet implementation</i>	2017
36. <a href="#">bamos/block</a>   ★308   <i>Intelligent block matrix constructions</i>	2017
37. <a href="#">bamos/setGPU</a>   ★107   <i>Automatically use the least-loaded GPU</i>	2017
38. <a href="#">bamos/dcgan-completion.tensorflow</a>   ★1.3k   <i>Image completion with GANs</i>	2016
39. <a href="#">cmusatyalab/openface</a>   ★15.3k   <i>Face recognition with deep neural networks</i>	2015
40. <a href="#">bamos/girl</a>   ★70   <i>GitHub README link checker</i>	2015
41. <a href="#">bamos/conference-tracker</a>   ★71   <i>Minimal conference tracker</i>	2015
42. <a href="#">vtopt/qnstop</a>   ★10   <i>Fortran quasi-Newton stochastic optimization library</i>	2014
43. <a href="#">bamos/snowglobe</a>   ★27   <i>Haskell-driven, self-hosted web analytics with minimal configuration</i>	2014
44. <a href="#">bamos/zsh-history-analysis</a>   ★236   <i>Analyze and plot your zsh history</i>	2014
45. <a href="#">bamos/beamer-snippets</a>   ★110   <i>Beamer and TikZ snippets</i>	2014
46. <a href="#">bamos/latex-templates</a>   ★364   <i>LaTeX templates</i>	2013
47. <a href="#">cparse/cparse</a>   ★353   <i>C++ expression parser using Dijkstra's shunting-yard algorithm</i>	2013
48. <a href="#">bamos/cv</a>   ★409   <i>Source for this CV: Creates LaTeX/Markdown from YAML/BibTeX</i>	2013
49. <a href="#">bamos/parsec-benchmark</a>   ★111   <i>PARSEC benchmark support for Arch Linux</i>	2013
50. <a href="#">bamos/python-scripts</a>   ★197   <i>Short and fun Python scripts</i>	2013
51. <a href="#">bamos/reading-list</a>   ★186   <i>YAML reading list and notes system</i>	2013
52. <a href="#">bamos/dotfiles</a>   ★241   ♥ <i>Linux, xmonad, emacs, vim, zsh, tmux</i>	2012

## Invited Talks

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

1. <i>AdvPrompter: Fast Adaptive Adversarial Prompting for LLMs</i> — USC	2025
2. <i>On amortized optimization for RL, Bayesian optimization, and biology</i> — ai4b.io	2025
3. <i>Transport and flows between distributions over distributions</i> — Columbia University	2025
4. <i>Transport and flows between distributions over distributions</i> — Genesis Therapeutics	2024
5. <i>Transport and flows between distributions over distributions</i> — UT Austin	2024
6. <i>On LLM prompt optimization and amortization</i> — Dagstuhl Seminar on ML for CO	2024
7. <i>Amortized optimization for optimal transport and LLM attacks</i> — ISMP	2024
8. <i>Differentiable optimization for robotics</i> — RSS Optimization for Robotics Workshop	2024
9. <i>Amortized optimization-based reasoning for AI</i> — University of Amsterdam	2024
10. <i>End-to-end learning geometries for graphs, dynamical systems, and regression</i> — LoG New York	2024
11. <i>Amortized optimization for optimal transport</i> — NeurIPS Optimal Transport and ML Workshop	2023
12. <i>On optimal control and machine learning</i> — ICML Control and Dynamical Systems Workshop	2023
13. <i>Tutorial on amortized optimization</i> — Brown University	2023
14. <i>Learning with differentiable and amortized optimization</i> — NYU AI Seminar	2023
15. <i>Learning with differentiable and amortized optimization</i> — Vanderbilt ML Seminar	2023
16. <i>Learning with differentiable and amortized optimization</i> — Microsoft Research	2022
17. <i>Amortized optimization for computing optimal transport maps</i> — Flatiron Workshop	2022
18. <i>Learning with differentiable and amortized optimization</i> — Cornell AI Seminar	2022
19. <i>Learning with differentiable and amortized optimization</i> — Cornell Tech Seminar	2022
20. <i>Learning with differentiable and amortized optimization</i> — Argonne National Laboratory	2022
21. <i>Theseus: A library for differentiable nonlinear optimization</i> — NYU	2022
22. <i>Theseus: A library for differentiable nonlinear optimization</i> — University of Zurich	2022
23. <i>Differentiable optimization-based modeling for machine learning</i> — Colorado Mines AMS Colloquium	2022
24. <i>Differentiable optimization</i> — IJCAI Tutorial	2022
25. <i>Differentiable optimization for control and RL</i> — ICML Workshop on Decision Awareness in RL	2022
26. <i>Differentiable optimization-based modeling for machine learning</i> — CPAIOR Master Class	2022

27. <a href="#">Tutorial on amortized optimization</a> — ICCOPT	2022
28. <a href="#">Differentiable optimization for control and RL</a> — Gridmatic	2022
29. <a href="#">Learning for control with differentiable optimization and ODEs</a> — Columbia University	2021
30. <a href="#">Differentiable optimization-based modeling for machine learning</a> — IBM Research	2021
31. <a href="#">Differentiable optimization for control</a> — Max Planck Institute (Tübingen)	2020
32. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Mila Seminar	2020
33. <a href="#">Deep Declarative Networks</a> — ECCV Tutorial	2020
34. <a href="#">On differentiable optimization for control and vision</a> — CVPR Deep Declarative Networks Workshop	2020
35. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Caltech CS 159 (Guest Lecture)	2020
36. <a href="#">Unrolled optimization for learning deep energy models</a> — SIAM MDS Minisymposium	2020
37. <a href="#">Differentiable optimization-based modeling for machine learning</a> — NYU CILVR Seminar	2019
38. <a href="#">Differentiable optimization-based modeling for machine learning</a> — INFORMS	2019
39. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Facebook AI Research	2019
40. <a href="#">Differentiable optimization-based modeling for machine learning</a> — ISMP	2018
41. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Google Brain	2018
42. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Bosch Center for AI	2018
43. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Waymo Research	2018
44. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Tesla AI	2018
45. <a href="#">Differentiable optimization-based modeling for machine learning</a> — NVIDIA Robotics	2018
46. <a href="#">Differentiable optimization-based modeling for machine learning</a> — Salesforce Research	2018
47. <a href="#">Differentiable optimization-based modeling for machine learning</a> — OpenAI	2018
48. <a href="#">Differentiable optimization-based modeling for machine learning</a> — NNAISENSE	2018
49. <a href="#">Differentiable optimization and control</a> — UC Berkeley	2018

## Interns and Students

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

## Professional Activities

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AAAI Senior Program Committee	2026
NeurIPS Area Chair	2025
AAAI Senior Program Committee	2025
NeurIPS Area Chair	2024
NeurIPS Datasets and Benchmarks Area Chair	2024

AAAI Senior Program Committee	2024
NeurIPS Area Chair	2023
NeurIPS Datasets and Benchmarks Area Chair	2023
AAAI Senior Program Committee	2023
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

## Reviewing.....

AAAI Conference on Artificial Intelligence  
 American Controls Conference (ACC)  
 Artificial Intelligence and Statistics (AISTATS)  
 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

Applied Machine Learning (Cornell Tech CS5785), Co-instructor	F2024
Graduate AI (CMU 15-780), TA	S2017
Distributed Systems (CMU 15-440/640), TA	S2016
Software Design and Data Structures (VT CS2114), TA	S2013

## Skills

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