

Brandon Amos

✉ bda@meta.com • [bamos.github.io](https://github.com/bamos) • [in bdamos](https://www.linkedin.com/in/bdamos) • [tw brandondamos](https://twitter.com/brandondamos)

[bamos](https://github.com/bamos) • Last updated on October 30, 2024

Current Positions

Research Scientist, *Meta, Fundamental AI Research (FAIR)*, New York City 2019 – Present
Visiting Lecturer, *Cornell Tech*, New York City 2024 – 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

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

[NeurIPS Top Reviewer](#) 2022
[ICML Outstanding Reviewer](#) 2022
[ICLR Outstanding Reviewer](#) 2019
[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: 9.1k+ citations and an h-index of 38]

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

2024.....

1. [AdvPrompter: Fast Adaptive Adversarial Prompting for LLMs](#) [code]
[Anselm Paulus*](#), [Arman Zharmagambetov*](#), [Chuan Guo](#), **Brandon Amos[†]**, and [Yuandong Tian[†]](#)
arXiv 2024

2. [Neural Optimal Transport with Lagrangian Costs](#) [code]
Aram-Alexandre Pooladian, Carles Domingo-Enrich, Ricky T. Q. Chen, and **Brandon Amos**
UAI 2024
3. [Learning to Warm-Start Fixed-Point Optimization Algorithms](#) [code]
Rajiv Sambharya, Georgina Hall, **Brandon Amos**, and Bartolomeo Stellato
JMLR 2024
4. [Unlocking Tokens as Data Points for Generalization Bounds on Larger Language Models](#)
Sanae Lotfi, Yilun Kuang, Marc Anton Finzi, **Brandon Amos**, Micah Goldblum, and Andrew Gordon Wilson
NeurIPS 2024
5. [Stochastic Optimal Control Matching](#) [code]
Carles Domingo-Enrich, Jiequn Han, **Brandon Amos**, Joan Bruna, and Ricky T. Q. Chen
NeurIPS 2024
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
ICML GRaM Workshop 2024
7. [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
8. [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
9. [Exact Byte-Level Probabilities from Tokenized Language Models for FIM-Tasks and Model Ensembles](#)
Buu Phan, **Brandon Amos**, Itai Gat, Marton Havasi, Matthew Muckley, and Karen Ullrich
arXiv 2024

2023.....

10. [Tutorial on amortized optimization](#) [code]
Brandon Amos
Foundations and Trends in Machine Learning 2023
11. [On amortizing convex conjugates for optimal transport](#) [code]
Brandon Amos
ICLR 2023
12. [End-to-End Learning to Warm-Start for Real-Time Quadratic Optimization](#) [code]
Rajiv Sambharya, Georgina Hall, **Brandon Amos**, and Bartolomeo Stellato
L4DC 2023
13. [Meta Optimal Transport](#) [code]
Brandon Amos, Samuel Cohen, Giulia Luise, and Ievgen Redko
ICML 2023

14. *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
15. *Semi-Supervised Offline Reinforcement Learning with Action-Free Trajectories*
Qinqing Zheng, Mikael Henaff, **Brandon Amos**, and Aditya Grover
ICML 2023
16. *TaskMet: Task-Driven Metric Learning for Model Learning* [code]
Dishank Bansal, Ricky T. Q. Chen, Mustafa Mukadam, and **Brandon Amos**
NeurIPS 2023
17. *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
18. *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.....

19. *Cross-Domain Imitation Learning via Optimal Transport* [code]
Arnaud Fickinger, Samuel Cohen, Stuart Russell, and **Brandon Amos**
ICLR 2022
20. *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
21. *Semi-Discrete Normalizing Flows through Differentiable Tessellation*
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel
NeurIPS 2022
22. *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
23. *Nocturne: a driving benchmark for multi-agent learning* [code]
Eugene Vinitsky, Nathan Lichtlé, Xiaomeng Yang, **Brandon Amos**, and Jakob Foerster
NeurIPS Datasets and Benchmarks Track 2022

2021.....

24. *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)

25. [Riemannian Convex Potential Maps](#) [code] [slides]
Samuel Cohen*, **Brandon Amos***, and Yaron Lipman
ICML 2021
26. [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
27. [Scalable Online Planning via Reinforcement Learning Fine-Tuning](#)
Arnaud Fickinger, Hengyuan Hu, **Brandon Amos**, Stuart Russell, and Noam Brown
NeurIPS 2021
28. [Aligning Time Series on Incomparable Spaces](#) [code] [slides]
Samuel Cohen, Giulia Luise, Alexander Terenin, **Brandon Amos**, and Marc Peter Deisenroth
AISTATS 2021
29. [Learning Neural Event Functions for Ordinary Differential Equations](#) [code]
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel
ICLR 2021
30. [Neural Spatio-Temporal Point Processes](#) [code]
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel
ICLR 2021
31. [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
32. [Neural Fixed-Point Acceleration for Convex Optimization](#) [code]
Shobha Venkataraman* and **Brandon Amos***
ICML AutoML Workshop 2021
33. [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
34. [Input Convex Gradient Networks](#)
Jack Richter-Powell, Jonathan Lorraine, and **Brandon Amos**
NeurIPS OTML Workshop 2021
35. [Imitation Learning from Pixel Observations for Continuous Control](#)
Samuel Cohen, **Brandon Amos**, Marc Peter Deisenroth, Mikael Henaff, Eugene Vitisnky, and Denis Yarats
NeurIPS DeepRL Workshop 2021
36. [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.....

37. [The Differentiable Cross-Entropy Method](#) [code] [slides]
Brandon Amos and Denis Yarats
ICML 2020

38. *Objective Mismatch in Model-based Reinforcement Learning*
Nathan Lambert, **Brandon Amos**, Omry Yadan, and Roberto Calandra
L4DC 2020
 39. *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
 40. *Neural Potts Model*
Tom Sercu, Robert Verkuil, Joshua Meier, **Brandon Amos**, Zeming Lin, Caroline Chen, Jason Liu, Yann LeCun, and Alexander Rives
MLCB 2020
 41. *Deep Riemannian Manifold Learning*
Aaron Lou, Maximilian Nickel, and **Brandon Amos**
NeurIPS Geo4dl Workshop 2020
- 2019.....
42. *Differentiable Optimization-Based Modeling for Machine Learning* [code]
Brandon Amos
Ph.D. Thesis 2019
 43. *Differentiable Convex Optimization Layers* [code]
Akshay Agrawal*, **Brandon Amos***, Shane Barratt*, Stephen Boyd*, Steven Diamond*, and J. Zico Kolter*
NeurIPS 2019
 44. *The Limited Multi-Label Projection Layer* [code]
Brandon Amos, Vladlen Koltun, and J. Zico Kolter
arXiv 2019
 45. *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.....
46. *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
 47. *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
 48. *Depth-Limited Solving for Imperfect-Information Games*
Noam Brown, Tuomas Sandholm, and **Brandon Amos**
NeurIPS 2018

49. *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.....
50. *OptNet: Differentiable Optimization as a Layer in Neural Networks* [code] [slides]
Brandon Amos and J. Zico Kolter
ICML 2017
 51. *Input Convex Neural Networks* [code] [slides]
Brandon Amos, Lei Xu, and J. Zico Kolter
ICML 2017
 52. *Task-based End-to-end Model Learning* [code]
Priya L. Donti, **Brandon Amos**, and J. Zico Kolter
NeurIPS 2017
 53. *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
 54. *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
 55. *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
 56. *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.....
57. *OpenFace: A general-purpose face recognition library with mobile applications* [code]
Brandon Amos, Bartosz Ludwiczuk, and Mahadev Satyanarayanan
CMU 2016
 58. *Collapsed Variational Inference for Sum-Product Networks*
Han Zhao, Tameem Adel, Geoff Gordon, and **Brandon Amos**
ICML 2016
 59. *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

60. *Privacy mediators: helping IoT cross the chasm*
Nigel Davies, Nina Taft, Mahadev Satyanarayanan, Sarah Clinch, and **Brandon Amos**
HotMobile 2016
- 2015 and earlier.....
61. *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
62. *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
63. *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
64. *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
65. *Are Cloudlets Necessary?*
Ying Gao, Wenlu Hu, Kiryong Ha, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan
CMU 2015
66. *Adaptive VM handoff across cloudlets*
Kiryong Ha, Yoshihisa Abe, Zhuo Chen, Wenlu Hu, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan
CMU 2015
67. *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
68. *Applying machine learning classifiers to dynamic Android malware detection at scale* [code]
Brandon Amos, Hamilton Turner, and Jules White
IWCMC 2013

Open Source Repositories

36.1k+ GitHub stars across all repositories.

- | | |
|--|------|
| 1. facebookresearch/advprompter — ★117 — <i>Fast Adaptive Adversarial Prompting for LLMs</i> | 2024 |
| 2. facebookresearch/lagrangian-ot — ★47 — <i>Lagrangian OT</i> | 2024 |
| 3. lazaratan/meta-flow-matching — ★37 — <i>Meta Flow Matching</i> | 2024 |
| 4. facebookresearch/soc-matching — ★23 — <i>Stochastic Optimal Control Matching</i> | 2024 |
| 5. facebookresearch/amortized-optimization-tutorial — ★236 — <i>Tutorial on amortized optimization</i> | 2023 |
| 6. facebookresearch/taskmet — ★18 — <i>TaskMet: Task-Driven Metric Learning for Model Learning</i> | 2023 |
| 7. facebookresearch/w2ot — ★43 — <i>Wasserstein-2 optimal transport in JAX</i> | 2023 |

| | | |
|-----|--|------|
| 8. | facebookresearch/LANCER — ★34 — <i>Landscape Surrogate Learning Decision Losses</i> | 2023 |
| 9. | facebookresearch/theseus — ★1.8k — <i>Differentiable non-linear optimization library</i> | 2022 |
| 10. | facebookresearch/meta-ot — ★95 — <i>Meta Optimal Transport</i> | 2022 |
| 11. | bamos/presentations — ★142 — <i>Source for my major presentations</i> | 2022 |
| 12. | facebookresearch/gwil — ★23 — <i>Gromov-Wasserstein Cross Domain Imitation Learning</i> | 2022 |
| 13. | facebookresearch/nocturne — ★263 — <i>A partially-observable multi-agent driving simulator</i> | 2022 |
| 14. | facebookresearch/rcpm — ★68 — <i>Riemannian Convex Potential Maps</i> | 2021 |
| 15. | facebookresearch/svg — ★55 — <i>Model-based stochastic value gradient</i> | 2021 |
| 16. | facebookresearch/mbrl-lib — ★957 — <i>Model-based reinforcement learning library</i> | 2021 |
| 17. | martius-lab/CombOptNet — ★72 — <i>CombOptNet</i> | 2021 |
| 18. | samcohen16/Aligning-Time-Series — ★49 — <i>Aligning time series on incomparable spaces</i> | 2021 |
| 19. | facebookresearch/neural_stpp — ★97 — <i>Neural Spatio-Temporal Point Processes</i> | 2021 |
| 20. | facebookresearch/neural-scs — ★29 — <i>Neural Fixed-Point Acceleration for SCS</i> | 2021 |
| 21. | rtqichen/torchdiffeq — ★5.5k — <i>PyTorch Differentiable ODE Solvers (differentiable event handling)</i> | 2021 |
| 22. | facebookresearch/dcem — ★123 — <i>The Differentiable Cross-Entropy Method</i> | 2020 |
| 23. | facebookresearch/higher — ★1.6k — <i>PyTorch higher-order gradient and optimization library</i> | 2019 |
| 24. | bamos/thesis — ★318 — <i>Ph.D. Thesis LaTeX source code</i> | 2019 |
| 25. | cvxgrp/cvxpylayers — ★1.8k — <i>Differentiable Convex Optimization Layers</i> | 2019 |
| 26. | locuslab/lml — ★57 — <i>The Limited Multi-Label Projection Layer</i> | 2019 |
| 27. | locuslab/mpc.pytorch — ★875 — <i>Differentiable PyTorch Model Predictive Control library</i> | 2018 |
| 28. | locuslab/differentiable-mpc — ★243 — <i>Differentiable MPC experiments</i> | 2018 |
| 29. | locuslab/icnn — ★277 — <i>Input Convex Neural Network experiments</i> | 2017 |
| 30. | locuslab/optnet — ★510 — <i>OptNet experiments</i> | 2017 |
| 31. | locuslab/qpth — ★679 — <i>Differentiable PyTorch QP solver</i> | 2017 |
| 32. | bamos/densenet.pytorch — ★827 — <i>PyTorch DenseNet implementation</i> | 2017 |
| 33. | bamos/block — ★298 — <i>Intelligent block matrix constructions</i> | 2017 |
| 34. | bamos/setGPU — ★106 — <i>Automatically use the least-loaded GPU</i> | 2017 |
| 35. | bamos/dcgan-completion.tensorflow — ★1.3k — <i>Image completion with GANs</i> | 2016 |
| 36. | cmusatyalab/openface — ★15.1k — <i>Face recognition with deep neural networks</i> | 2015 |
| 37. | bamos/girl — ★70 — <i>GitHub README link checker</i> | 2015 |
| 38. | bamos/conference-tracker — ★71 — <i>Minimal conference tracker</i> | 2015 |
| 39. | vtopt/qnstop — ★10 — <i>Fortran quasi-Newton stochastic optimization library</i> | 2014 |
| 40. | bamos/snowglobe — ★27 — <i>Haskell-driven, self-hosted web analytics with minimal configuration</i> | 2014 |
| 41. | bamos/zsh-history-analysis — ★226 — <i>Analyze and plot your zsh history</i> | 2014 |
| 42. | bamos/beamer-snippets — ★109 — <i>Beamer and TikZ snippets</i> | 2014 |
| 43. | bamos/latex-templates — ★366 — <i>LaTeX templates</i> | 2013 |
| 44. | cparse/cparse — ★335 — <i>C++ expression parser using Dijkstra's shunting-yard algorithm</i> | 2013 |
| 45. | bamos/cv — ★401 — <i>Source for this CV: Creates LaTeX/Markdown from YAML/BibTeX</i> | 2013 |
| 46. | bamos/parsec-benchmark — ★98 — <i>PARSEC benchmark support for Arch Linux</i> | 2013 |
| 47. | bamos/python-scripts — ★197 — <i>Short and fun Python scripts</i> | 2013 |
| 48. | bamos/reading-list — ★185 — <i>YAML reading list and notes system</i> | 2013 |
| 49. | bamos/dotfiles — ★239 — ♥ <i>Linux, xmonad, emacs, vim, zsh, tmux</i> | 2012 |

Invited Talks

Slides for my major presentations are open-sourced with a CC-BY license at [bamos/presentations](#).

| | | |
|----|--|------|
| 1. | <i>On LLM prompt optimization and amortization</i> — Dagstuhl Seminar on ML for CO | 2024 |
| 2. | <i>Amortized optimization for optimal transport and LLM attacks</i> — ISMP | 2024 |
| 3. | <i>Differentiable optimization for robotics</i> — RSS Optimization for Robotics Workshop | 2024 |
| 4. | <i>Amortized optimization-based reasoning for AI</i> — University of Amsterdam | 2024 |
| 5. | <i>End-to-end learning geometries for graphs, dynamical systems, and regression</i> — LoG New York | 2024 |

| | |
|--|------|
| 6. Amortized optimization for optimal transport — NeurIPS Optimal Transport and ML Workshop | 2023 |
| 7. On optimal control and machine learning — ICML Control and Dynamical Systems Workshop | 2023 |
| 8. Tutorial on amortized optimization — Brown University | 2023 |
| 9. Learning with differentiable and amortized optimization — NYU AI Seminar | 2023 |
| 10. Learning with differentiable and amortized optimization — Vanderbilt ML Seminar | 2023 |
| 11. Learning with differentiable and amortized optimization — Microsoft Research | 2022 |
| 12. Amortized optimization for computing optimal transport maps — Flatiron Workshop | 2022 |
| 13. Learning with differentiable and amortized optimization — Cornell AI Seminar | 2022 |
| 14. Learning with differentiable and amortized optimization — Cornell Tech Seminar | 2022 |
| 15. Learning with differentiable and amortized optimization — Argonne National Laboratory | 2022 |
| 16. Theseus: A library for differentiable nonlinear optimization — NYU | 2022 |
| 17. Theseus: A library for differentiable nonlinear optimization — University of Zurich | 2022 |
| 18. Differentiable optimization-based modeling for machine learning — Colorado Mines AMS Colloquium | 2022 |
| 19. Differentiable optimization — IJCAI Tutorial | 2022 |
| 20. Differentiable optimization for control and RL — ICML Workshop on Decision Awareness in RL | 2022 |
| 21. Differentiable optimization-based modeling for machine learning — CPAIOR Master Class | 2022 |
| 22. Tutorial on amortized optimization — ICCOPT | 2022 |
| 23. Differentiable optimization for control and RL — Gridmatic | 2022 |
| 24. Learning for control with differentiable optimization and ODEs — Columbia University | 2021 |
| 25. Differentiable optimization-based modeling for machine learning — IBM Research | 2021 |
| 26. Differentiable optimization for control — Max Planck Institute (Tübingen) | 2020 |
| 27. Differentiable optimization-based modeling for machine learning — Mila Seminar | 2020 |
| 28. Deep Declarative Networks — ECCV Tutorial | 2020 |
| 29. On differentiable optimization for control and vision — CVPR Deep Declarative Networks Workshop | 2020 |
| 30. Differentiable optimization-based modeling for machine learning — Caltech CS 159 (Guest Lecture) | 2020 |
| 31. Unrolled optimization for learning deep energy models — SIAM MDS Minisymposium | 2020 |
| 32. Differentiable optimization-based modeling for machine learning — NYU CILVR Seminar | 2019 |
| 33. Differentiable optimization-based modeling for machine learning — INFORMS | 2019 |
| 34. Differentiable optimization-based modeling for machine learning — Facebook AI Research | 2019 |
| 35. Differentiable optimization-based modeling for machine learning — ISMP | 2018 |
| 36. Differentiable optimization-based modeling for machine learning — Google Brain | 2018 |
| 37. Differentiable optimization-based modeling for machine learning — Bosch Center for AI | 2018 |
| 38. Differentiable optimization-based modeling for machine learning — Waymo Research | 2018 |
| 39. Differentiable optimization-based modeling for machine learning — Tesla AI | 2018 |
| 40. Differentiable optimization-based modeling for machine learning — NVIDIA Robotics | 2018 |
| 41. Differentiable optimization-based modeling for machine learning — Salesforce Research | 2018 |
| 42. Differentiable optimization-based modeling for machine learning — OpenAI | 2018 |
| 43. Differentiable optimization-based modeling for machine learning — NNAISENSE | 2018 |
| 44. Differentiable optimization and control — UC Berkeley | 2018 |

Interns and Students

| | |
|--|----------------|
| Aaron Havens (visiting FAIR from UIUC) | 2024 – present |
| Aram-Alexandre Pooladian (visiting FAIR from NYU) | 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) | 2022 – 2023 |
| Dishank Bansal (AI resident at FAIR) | 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 Vinitzky (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

| | |
|--|-------------|
| 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)
 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 the Constraint Programming, AI, and Operations Research (CPAIOR)
 International Conference on Learning Representations (ICLR)
 International Conference on Machine Learning (ICML)
 International Conference on Machine Learning (ICML) SODS Workshop
 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) OPT Workshop
 Neural Information Processing Systems (NeurIPS) DiffCVGP Workshop
 Neural Information Processing Systems (NeurIPS) Deep RL Workshop
 Optimization Letters
 Transactions on Machine Learning Research (TMLR)

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 |

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 |