

# Brandon Amos

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## Current Position

**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

**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: 8.5k+ citations and an h-index of 37]

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<sup>†</sup>**, and [Yuandong Tian<sup>†</sup>](#)  
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. [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  
arXiv 2024
5. [Meta Flow Matching: Integrating Vector Fields on the Wasserstein Manifold](#)  
Lazar Atanackovic, Xi Zhang, **Brandon Amos**, Mathieu Blanchette, Leo J Lee, Yoshua Bengio,  
Alexander Tong, and Kirill Neklyudov  
ICML GRaM Workshop 2024
6. [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  
ICML TF2M Workshop 2024

2023.....

7. [Tutorial on amortized optimization](#) [code]  
**Brandon Amos**  
Foundations and Trends in Machine Learning 2023
8. [On amortizing convex conjugates for optimal transport](#) [code]  
**Brandon Amos**  
ICLR 2023
9. [End-to-End Learning to Warm-Start for Real-Time Quadratic Optimization](#) [code]  
Rajiv Sambharya, Georgina Hall, **Brandon Amos**, and Bartolomeo Stellato  
L4DC 2023
10. [Meta Optimal Transport](#) [code]  
**Brandon Amos**, Samuel Cohen, Giulia Luise, and Ievgen Redko  
ICML 2023
11. [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
12. [Semi-Supervised Offline Reinforcement Learning with Action-Free Trajectories](#)  
Qinqing Zheng, Mikael Henaff, **Brandon Amos**, and Aditya Grover  
ICML 2023
13. [TaskMet: Task-Driven Metric Learning for Model Learning](#)  
Dishank Bansal, Ricky T. Q. Chen, Mustafa Mukadam, and **Brandon Amos**  
NeurIPS 2023
14. [Landscape Surrogate: Learning Decision Losses for Mathematical Optimization Under Partial Information](#)  
Arman Zharmagambetov, **Brandon Amos**, Aaron Ferber, Taoan Huang, Bistra Dilkina, and  
Yuandong Tian  
NeurIPS 2023

15. *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
  16. *Stochastic Optimal Control Matching*  
Carles Domingo-Enrich, Jiequn Han, **Brandon Amos**, Joan Bruna, and Ricky T. Q. Chen  
arXiv 2023
- 2022.....
17. *Cross-Domain Imitation Learning via Optimal Transport* [code]  
Arnaud Fickinger, Samuel Cohen, Stuart Russell, and **Brandon Amos**  
ICLR 2022
  18. *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
  19. *Semi-Discrete Normalizing Flows through Differentiable Tessellation*  
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel  
NeurIPS 2022
  20. *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
  21. *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.....
22. *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)
  23. *Riemannian Convex Potential Maps* [code] [slides]  
Samuel Cohen\*, **Brandon Amos\***, and Yaron Lipman  
ICML 2021
  24. *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
  25. *Scalable Online Planning via Reinforcement Learning Fine-Tuning*  
Arnaud Fickinger, Hengyuan Hu, **Brandon Amos**, Stuart Russell, and Noam Brown  
NeurIPS 2021
  26. *Aligning Time Series on Incomparable Spaces* [code] [slides]  
Samuel Cohen, Giulia Luise, Alexander Terenin, **Brandon Amos**, and Marc Peter Deisenroth  
AISTATS 2021

27. [Learning Neural Event Functions for Ordinary Differential Equations](#) [code]  
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel  
ICLR 2021
28. [Neural Spatio-Temporal Point Processes](#) [code]  
Ricky T. Q. Chen, **Brandon Amos**, and Maximilian Nickel  
ICLR 2021
29. [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
30. [Neural Fixed-Point Acceleration for Convex Optimization](#) [code]  
Shobha Venkataraman\* and **Brandon Amos\***  
ICML AutoML Workshop 2021
31. [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
32. [Input Convex Gradient Networks](#)  
Jack Richter-Powell, Jonathan Lorraine, and **Brandon Amos**  
NeurIPS OTML Workshop 2021
33. [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
34. [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.....

35. [The Differentiable Cross-Entropy Method](#) [code] [slides]  
**Brandon Amos** and Denis Yarats  
ICML 2020
36. [Objective Mismatch in Model-based Reinforcement Learning](#)  
Nathan Lambert, **Brandon Amos**, Omry Yadan, and Roberto Calandra  
L4DC 2020
37. [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
38. [Neural Potts Model](#)  
Tom Sercu, Robert Verkuil, Joshua Meier, **Brandon Amos**, Zeming Lin, Caroline Chen, Jason Liu, Yann LeCun, and Alexander Rives  
MLCB 2020
39. [Deep Riemannian Manifold Learning](#)  
Aaron Lou, Maximilian Nickel, and **Brandon Amos**  
NeurIPS Geo4dl Workshop 2020

## 2019.....

- 40. [Differentiable Optimization-Based Modeling for Machine Learning](#) [code]  
**Brandon Amos**  
Ph.D. Thesis 2019
- 41. [Differentiable Convex Optimization Layers](#) [code]  
Akshay Agrawal\*, **Brandon Amos\***, Shane Barratt\*, Stephen Boyd\*, Steven Diamond\*, and J. Zico Kolter\*  
NeurIPS 2019
- 42. [The Limited Multi-Label Projection Layer](#) [code]  
**Brandon Amos**, Vladlen Koltun, and J. Zico Kolter  
arXiv 2019
- 43. [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.....

- 44. [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
- 45. [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
- 46. [Depth-Limited Solving for Imperfect-Information Games](#)  
Noam Brown, Tuomas Sandholm, and **Brandon Amos**  
NeurIPS 2018
- 47. [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.....

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

51. *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
  52. *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
  53. *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
  54. *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.....
55. *OpenFace: A general-purpose face recognition library with mobile applications* [code]  
**Brandon Amos**, Bartosz Ludwiczuk, and Mahadev Satyanarayanan  
CMU 2016
  56. *Collapsed Variational Inference for Sum-Product Networks*  
Han Zhao, Tameem Adel, Geoff Gordon, and **Brandon Amos**  
ICML 2016
  57. *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
  58. *Privacy mediators: helping IoT cross the chasm*  
Nigel Davies, Nina Taft, Mahadev Satyanarayanan, Sarah Clinch, and **Brandon Amos**  
HotMobile 2016
- 2015 and earlier.....
59. *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
  60. *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

61. [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
62. [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
63. [Are Cloudlets Necessary?](#)  
Ying Gao, Wenlu Hu, Kiryong Ha, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan  
CMU 2015
64. [Adaptive VM handoff across cloudlets](#)  
Kiryong Ha, Yoshihisa Abe, Zhuo Chen, Wenlu Hu, **Brandon Amos**, Padmanabhan Pillai, and Mahadev Satyanarayanan  
CMU 2015
65. [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
66. [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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29.3k+ GitHub stars across all repositories.

- |  |      |
|--|------|
| 1. <a href="#">facebookresearch/advprompter</a> — ★91 — <i>Fast Adaptive Adversarial Prompting for LLMs</i>            | 2024 |
| 2. <a href="#">facebookresearch/lagrangian-ot</a> — ★9 — <i>Lagrangian OT</i>  | 2024 |
| 3. <a href="#">facebookresearch/amortized-optimization-tutorial</a> — ★232 — <i>Tutorial on amortized optimization</i> | 2023 |
| 4. <a href="#">facebookresearch/taskmet</a> — ★16 — <i>TaskMet: Task-Driven Metric Learning for Model Learning</i>     | 2023 |
| 5. <a href="#">facebookresearch/w2ot</a> — ★41 — <i>Wasserstein-2 optimal transport in JAX</i>                         | 2023 |
| 6. <a href="#">facebookresearch/theseus</a> — ★1.7k — <i>Differentiable non-linear optimization library</i>            | 2022 |
| 7. <a href="#">facebookresearch/meta-ot</a> — ★94 — <i>Meta Optimal Transport</i>                                      | 2022 |
| 8. <a href="#">bamos/presentations</a> — ★124 — <i>Source for my major presentations</i>                               | 2022 |
| 9. <a href="#">facebookresearch/rcpm</a> — ★67 — <i>Riemannian Convex Potential Maps</i>                               | 2021 |
| 10. <a href="#">facebookresearch/svg</a> — ★54 — <i>Model-based stochastic value gradient</i>                          | 2021 |
| 11. <a href="#">facebookresearch/mbml-lib</a> — ★932 — <i>Model-based reinforcement learning library</i>               | 2021 |
| 12. <a href="#">facebookresearch/dcem</a> — ★122 — <i>The Differentiable Cross-Entropy Method</i>                      | 2020 |
| 13. <a href="#">facebookresearch/higher</a> — ★1.6k — <i>PyTorch higher-order gradient and optimization library</i>    | 2019 |
| 14. <a href="#">bamos/thesis</a> — ★313 — <i>Ph.D. Thesis LaTeX source code</i>  | 2019 |
| 15. <a href="#">cvxgrp/cvxpylayers</a> — ★1.7k — <i>Differentiable Convex Optimization Layers</i>                      | 2019 |
| 16. <a href="#">locuslab/lml</a> — ★58 — <i>The Limited Multi-Label Projection Layer</i>                               | 2019 |
| 17. <a href="#">locuslab/mpc.pytorch</a> — ★823 — <i>Differentiable PyTorch Model Predictive Control library</i>       | 2018 |
| 18. <a href="#">locuslab/differentiable-mpc</a> — ★219 — <i>Differentiable MPC experiments</i>                         | 2018 |
| 19. <a href="#">locuslab/icnn</a> — ★272 — <i>Input Convex Neural Network experiments</i>                              | 2017 |
| 20. <a href="#">locuslab/optnet</a> — ★490 — <i>OptNet experiments</i>   | 2017 |
| 21. <a href="#">locuslab/qpth</a> — ★658 — <i>Differentiable PyTorch QP solver</i>                                     | 2017 |



22. <a href="#">bamos/densenet.pytorch</a> — ★817 — <i>PyTorch DenseNet implementation</i>	2017
23. <a href="#">bamos/block</a> — ★294 — <i>Intelligent block matrix constructions</i>	2017
24. <a href="#">bamos/setGPU</a> — ★106 — <i>Automatically use the least-loaded GPU</i>	2017
25. <a href="#">bamos/dcgan-completion.tensorflow</a> — ★1.3k — <i>Image completion with GANs</i>	2016
26. <a href="#">cmusatyalab/openface</a> — ★15.1k — <i>Face recognition with deep neural networks</i>	2015
27. <a href="#">vtopt/qnstop</a> — ★10 — <i>Fortran quasi-Newton stochastic optimization library</i>	2014
28. <a href="#">bamos/snowglobe</a> — ★27 — <i>Haskell-driven, self-hosted web analytics with minimal configuration</i>	2014
29. <a href="#">bamos/zsh-history-analysis</a> — ★221 — <i>Analyze and plot your zsh history</i>	2014
30. <a href="#">bamos/beamer-snippets</a> — ★109 — <i>Beamer and TikZ snippets</i>	2014
31. <a href="#">bamos/latex-templates</a> — ★364 — <i>LaTeX templates</i>	2013
32. <a href="#">cparse/cparse</a> — ★330 — <i>C++ expression parser using Dijkstra's shunting-yard algorithm</i>	2013
33. <a href="#">bamos/cv</a> — ★397 — <i>Source for this CV: Creates LaTeX/Markdown from YAML/BibTeX</i>	2013
34. <a href="#">bamos/python-scripts</a> — ★197 — <i>Short and fun Python scripts</i>	2013
35. <a href="#">bamos/reading-list</a> — ★186 — <i>YAML reading list and notes system</i>	2013
36. <a href="#">bamos/dotfiles</a> — ★238 — ♥ <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>Amortized optimization for optimal transport and LLM attacks</i> , ISMP	2024
2. <i>Differentiable optimization for robotics</i> , <a href="#">RSS Optimization for Robotics Workshop</a>	2024
3. <i>Amortized optimization-based reasoning for AI</i> , University of Amsterdam	2024
4. <i>End-to-end learning geometries for graphs, dynamical systems, and regression</i> , <a href="#">LoG New York</a>	2024
5. <i>Amortized optimization for optimal transport</i> , <a href="#">NeurIPS Optimal Transport and ML Workshop</a>	2023
6. <i>On optimal control and machine learning</i> , <a href="#">ICML Learning, Control, and Dynamical Systems Workshop</a>	2023
7. <i>Tutorial on amortized optimization</i> , Brown University	2023
8. <i>Learning with differentiable and amortized optimization</i> , NYU AI Seminar	2023
9. <i>Learning with differentiable and amortized optimization</i> , Vanderbilt ML Seminar	2023
10. <i>Learning with differentiable and amortized optimization</i> , Microsoft Research	2022
11. <i>Amortized optimization for computing optimal transport maps</i> , <a href="#">Flatiron Workshop</a>	2022
12. <i>Learning with differentiable and amortized optimization</i> , Cornell AI Seminar	2022
13. <i>Learning with differentiable and amortized optimization</i> , Cornell Tech Seminar	2022
14. <i>Learning with differentiable and amortized optimization</i> , Argonne National Laboratory	2022
15. <i>Theseus: A library for differentiable nonlinear optimization</i> , NYU	2022
16. <i>Theseus: A library for differentiable nonlinear optimization</i> , University of Zurich	2022
17. <i>Differentiable optimization-based modeling for machine learning</i> , Colorado Mines AMS Colloquium	2022
18. <i>Differentiable optimization</i> , <a href="#">IJCAI Tutorial</a>	2022
19. <i>Differentiable optimization for control and RL</i> , <a href="#">ICML Workshop on Decision Awareness in RL</a>	2022
20. <i>Differentiable optimization-based modeling for machine learning</i> , <a href="#">CPAIOR Master Class</a>	2022
21. <i>Tutorial on amortized optimization</i> , ICCOPT	2022
22. <i>Differentiable optimization for control and RL</i> , Gridmatic	2022
23. <i>Learning for control with differentiable optimization and ODEs</i> , Columbia University	2021
24. <i>Differentiable optimization-based modeling for machine learning</i> , IBM Research	2021
25. <i>Differentiable optimization for control</i> , Max Planck Institute (Tübingen)	2020
26. <i>Differentiable optimization-based modeling for machine learning</i> , Mila Seminar	2020
27. <i>Deep Declarative Networks</i> , <a href="#">ECCV Tutorial</a>	2020
28. <i>On differentiable optimization for control and vision</i> , <a href="#">CVPR Deep Declarative Networks Workshop</a>	2020
29. <i>Differentiable optimization-based modeling for machine learning</i> , <a href="#">Caltech CS 159 (Guest Lecture)</a>	2020
30. <i>Unrolled optimization for learning deep energy models</i> , <a href="#">SIAM MDS Minisymposium</a>	2020
31. <i>Differentiable optimization-based modeling for machine learning</i> , NYU CILVR Seminar	2019
32. <i>Differentiable optimization-based modeling for machine learning</i> , INFORMS	2019



33. <i>Differentiable optimization-based modeling for machine learning</i> , Facebook AI Research	2019
34. <i>Differentiable optimization-based modeling for machine learning</i> , ISMP	2018
35. <i>Differentiable optimization-based modeling for machine learning</i> , Google Brain	2018
36. <i>Differentiable optimization-based modeling for machine learning</i> , Bosch Center for AI	2018
37. <i>Differentiable optimization-based modeling for machine learning</i> , Waymo Research	2018
38. <i>Differentiable optimization-based modeling for machine learning</i> , Tesla AI	2018
39. <i>Differentiable optimization-based modeling for machine learning</i> , NVIDIA Robotics	2018
40. <i>Differentiable optimization-based modeling for machine learning</i> , Salesforce Research	2018
41. <i>Differentiable optimization-based modeling for machine learning</i> , OpenAI	2018
42. <i>Differentiable optimization-based modeling for machine learning</i> , NNAISENSE	2018
43. <i>Differentiable optimization and control</i> , UC Berkeley	2018

## Interns and Students

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<a href="#">Aaron Havens</a> (visiting FAIR from UIUC)	2024 – present
<a href="#">Aram-Alexandre Pooladian</a> (visiting FAIR from NYU)	2022 – present
<a href="#">Carles Domingo-Enrich</a> (visiting FAIR from NYU)	2022 – present
<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)	2022 – 2023
<a href="#">Arnaud Fickinger</a> (visiting FAIR from Berkeley)	2021 – 2022
<a href="#">Aaron Lou</a> (visiting FAIR from Cornell and Stanford)	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)	2020
<a href="#">Phillip Wang</a> (at CMU, now CEO at <a href="#">Gather</a> )	2018

## Professional Activities

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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
<a href="#">NeurIPS Learning Meets Combinatorial Optimization Workshop Organizer</a>	2020
<a href="#">CVPR Deep Declarative Networks Workshop Organizer</a>	2020
<a href="#">ECCV Deep Declarative Networks Tutorial Organizer</a>	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

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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

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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