# Brandon Amos

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bamos • Last updated on October 25, 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 Conter 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*
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*
Lazar Atanackovic, Xi Zhang, **Brandon Amos**, Mathieu Blanchette, Leo J Lee, Yoshua Bengio, Alexander Tong, and Kirill Neklyudov
ICML GRaM Workshop 2024

7. *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

8. *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

9. *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

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*
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*
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 Vinitsky, 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**, Guanhang 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 Simoens, 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

29.7k+ GitHub stars across all repositories.

1. facebookresearch/advprompter — ★117 — *Fast Adaptive Adversarial Prompting for LLMs* 2024
2. facebookresearch/lagrangian-ot — ★47 — *Lagrangian OT* 2024
3. facebookresearch/amortized-optimization-tutorial — ★236 — *Tutorial on amortized optimization* 2023
4. facebookresearch/taskmet — ★18 — *TaskMet: Task-Driven Metric Learning for Model Learning* 2023
5. facebookresearch/w2ot — ★43 — *Wasserstein-2 optimal transport in JAX* 2023
6. facebookresearch/theseus — ★1.8k — *Differentiable non-linear optimization library* 2022
7. facebookresearch/meta-ot — ★95 — *Meta Optimal Transport* 2022

8. bamos/presentations — ★142 — *Source for my major presentations* 2022
9. facebookresearch/rcpm — ★68 — *Riemannian Convex Potential Maps* 2021
10. facebookresearch/svg — ★55 — *Model-based stochastic value gradient* 2021
11. facebookresearch/mbrl-lib — ★957 — *Model-based reinforcement learning library* 2021
12. facebookresearch/dcem — ★123 — *The Differentiable Cross-Entropy Method* 2020
13. facebookresearch/higher — ★1.6k — *PyTorch higher-order gradient and optimization library* 2019
14. bamos/thesis — ★318 — *Ph.D. Thesis LaTeX source code* 2019
15. cvxgrp/cvxpylayers — ★1.8k — *Differentiable Convex Optimization Layers* 2019
16. locuslab/lml — ★57 — *The Limited Multi-Label Projection Layer* 2019
17. locuslab/mpc.pytorch — ★875 — *Differentiable PyTorch Model Predictive Control library* 2018
18. locuslab/differentiable-mpc — ★243 — *Differentiable MPC experiments* 2018
19. locuslab/icnn — ★277 — *Input Convex Neural Network experiments* 2017
20. locuslab/optnet — ★510 — *OptNet experiments* 2017
21. locuslab/qpth — ★679 — *Differentiable PyTorch QP solver* 2017
22. bamos/densenet.pytorch — ★827 — *PyTorch DenseNet implementation* 2017
23. bamos/block — ★298 — *Intelligent block matrix constructions* 2017
24. bamos/setGPU — ★106 — *Automatically use the least-loaded GPU* 2017
25. bamos/dcgan-completion.tensorflow — ★1.3k — *Image completion with GANs* 2016
26. cmusatyalab/openface — ★15.1k — *Face recognition with deep neural networks* 2015
27. vtopt/qnstop — ★10 — *Fortran quasi-Newton stochastic optimization library* 2014
28. bamos/snowglobe — ★27 — *Haskell-driven, self-hosted web analytics with minimal configuration* 2014
29. bamos/zsh-history-analysis — ★226 — *Analyze and plot your zsh history* 2014
30. bamos/beamer-snippets — ★109 — *Beamer and TikZ snippets* 2014
31. bamos/latex-templates — ★366 — *LaTeX templates* 2013
32. cparse/cparse — ★335 — *C++ expression parser using Dijkstra's shunting-yard algorithm* 2013
33. bamos/cv — ★401 — *Source for this CV: Creates LaTeX/Markdown from YAML/BibTeX* 2013
34. bamos/python-scripts — ★197 — *Short and fun Python scripts* 2013
35. bamos/reading-list — ★185 — *YAML reading list and notes system* 2013
36. bamos/dotfiles — ★239 — ♥ *Linux, xmonad, emacs, vim, zsh, tmux* 2012

## Invited Talks

Slides for my major presentations are open-sourced with a CC-BY license at bamos/presentations.

1. *Amortized optimization for optimal transport and LLM attacks* — ISMP 2024
2. *Differentiable optimization for robotics* — RSS Optimization for Robotics Workshop 2024
3. *Amortized optimization-based reasoning for AI* — University of Amsterdam 2024
4. *End-to-end learning geometries for graphs, dynamical systems, and regression* — LoG New York 2024
5. *Amortized optimization for optimal transport* — NeurIPS Optimal Transport and ML Workshop 2023
6. *On optimal control and machine learning* — ICML Control and Dynamical Systems Workshop 2023
7. *Tutorial on amortized optimization* — Brown University 2023
8. *Learning with differentiable and amortized optimization* — NYU AI Seminar 2023
9. *Learning with differentiable and amortized optimization* — Vanderbilt ML Seminar 2023
10. *Learning with differentiable and amortized optimization* — Microsoft Research 2022
11. *Amortized optimization for computing optimal transport maps* — Flatiron Workshop 2022
12. *Learning with differentiable and amortized optimization* — Cornell AI Seminar 2022
13. *Learning with differentiable and amortized optimization* — Cornell Tech Seminar 2022
14. *Learning with differentiable and amortized optimization* — Argonne National Laboratory 2022
15. *Theseus: A library for differentiable nonlinear optimization* — NYU 2022
16. *Theseus: A library for differentiable nonlinear optimization* — University of Zurich 2022
17. *Differentiable optimization-based modeling for machine learning* — Colorado Mines AMS Colloquium 2022
18. *Differentiable optimization* — IJCAI Tutorial 2022

19. *Differentiable optimization for control and RL* — ICML Workshop on Decision Awareness in RL 2022
20. *Differentiable optimization-based modeling for machine learning* — CPAIOR Master Class 2022
21. *Tutorial on amortized optimization* — ICCOPT 2022
22. *Differentiable optimization for control and RL* — Gridmatic 2022
23. *Learning for control with differentiable optimization and ODEs* — Columbia University 2021
24. *Differentiable optimization-based modeling for machine learning* — IBM Research 2021
25. *Differentiable optimization for control* — Max Planck Institute (Tübingen) 2020
26. *Differentiable optimization-based modeling for machine learning* — Mila Seminar 2020
27. *Deep Declarative Networks* — ECCV Tutorial 2020
28. *On differentiable optimization for control and vision* — CVPR Deep Declarative Networks Workshop 2020
29. *Differentiable optimization-based modeling for machine learning* — Caltech CS 159 (Guest Lecture) 2020
30. *Unrolled optimization for learning deep energy models* — SIAM MDS Minisymposium 2020
31. *Differentiable optimization-based modeling for machine learning* — NYU CILVR Seminar 2019
32. *Differentiable optimization-based modeling for machine learning* — INFORMS 2019
33. *Differentiable optimization-based modeling for machine learning* — Facebook AI Research 2019
34. *Differentiable optimization-based modeling for machine learning* — ISMP 2018
35. *Differentiable optimization-based modeling for machine learning* — Google Brain 2018
36. *Differentiable optimization-based modeling for machine learning* — Bosch Center for AI 2018
37. *Differentiable optimization-based modeling for machine learning* — Waymo Research 2018
38. *Differentiable optimization-based modeling for machine learning* — Tesla AI 2018
39. *Differentiable optimization-based modeling for machine learning* — NVIDIA Robotics 2018
40. *Differentiable optimization-based modeling for machine learning* — Salesforce Research 2018
41. *Differentiable optimization-based modeling for machine learning* — OpenAI 2018
42. *Differentiable optimization-based modeling for machine learning* — NNAISENSE 2018
43. *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 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

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

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| 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

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|---|---|
| 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

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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 |