PRIYA L. DONTI

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EDUCATION

Carnegie Mellon University, Pittsburgh, PA, USA 2016–present
Joint Ph.D. student between Computer Science and Engineering & Public Policy
Advisors: Zico Kolter, Inês Azevedo

Harvey Mudd College, Claremont, CA, USA 2011–2015
B.S. Joint Major in Computer Science and Mathematics, Emphasis in Environmental Analysis
Graduated with High Distinction, GPA: 3.93

SELECTED HONORS AND AWARDS

Best Paper Honorable Mention at ICML 2019	2019
Best Poster at Power and Energy Conference at Illinois (PECI) 2019	2019
Highlighted Paper Award at AI for Social Good workshop (NeurIPS 2018)	2018
DOE Computational Science Graduate Fellowship	2017–present
National Science Foundation Graduate Research Fellowship	2015–2017
Thomas J. Watson Fellowship	2015–2016
Computing Research Association Outstanding Undergraduate Award (Finalist)	2014
Udall Scholarship (Honorable Mention)	2014
Harvey Mudd President's Scholarship	2011-2015

PUBLICATIONS

DC3: A learning method for optimization with hard constraints
Under review at ICLR 2021
Priya L. Donti,* David Rolnick,* J. Zico Kolter

Enforcing robust control guarantees within neural network policies
Priya L. Donti, Melrose Roderick, Mahyar Fazlyab, J. Zico Kolter

SATNet: Bridging deep learning and logical reasoning using a differentiable satisfiability solver
International Conference on Machine Learning (ICML) (2019)
Po-Wei Wang, **Priya L. Donti**, Bryan Wilder, and J. Zico Kolter
🏆 ***Honorable mention*** at ICML 2019

Matrix Completion for Low-Observability Voltage Estimation
IEEE Transactions on Smart Grid (2019)
Priya L. Donti, Andreas J. Schmitt, Andrey Bernstein, Yingchen Zhang

How Much Are We Saving after All? Characterizing the Effects of Commonly Varying Assumptions on Emissions and Damage Estimates in PJM
Environmental Science & Technology (2019)
Priya L. Donti, J. Zico Kolter, Inês Lima Azevedo

Tackling Climate Change with Machine Learning *(Preprint)*
David Rolnick, **Priya L. Donti***, Lynn H. Kaack, Kelly Kochanski, Alexandre Lacoste, Kris Sankaran, Andrew Slavin Ross, Nikola Milojevic-Dupont, Natasha Jaques, Anna Waldman-Brown, Alexandra Luccioni, Tegan Maharaj, Evan D. Sherwin, S. Karthik Mukkavilli, Konrad P. Kording, Carla Gomes, Andrew Y. Ng, Demis Hassabis, John C. Platt, Felix Creutzig, Jennifer Chayes, Yoshua Bengio
**Co-editor of full paper, and sole author of Electricity Systems section.*

Inverse Optimal Power Flow: Assessing the Vulnerability of Power Grid Data *(Working paper)*
Priya L. Donti, Inês Lima Azevedo, J. Zico Kolter

🏆 ***Highlighted paper*** at the AI for Social Good workshop at NeurIPS 2018
🏆 ***Best poster*** at the Power and Energy Conference at Illinois (PECI) 2019

Task-based End-to-end Model Learning in Stochastic Optimization
Advances in Neural Information Processing Systems (NeurIPS) (2017)
Priya L. Donti, Brandon Amos, J. Zico Kolter

Predicting the Quality of User Experiences to Improve Productivity and Wellness
Proceedings of the Twenty-Ninth AAAI Conference (Poster Abstract) (2015)
Priya L. Donti, Jacob Rosenbloom, Alex Gruver, James C. Boerkoel Jr.

EXPERIENCE

National Grid ESO, *Consultant*, Wokingham, UK Jun–Jul 2019

- Implemented a model for granular forecasting of electricity load (at the grid supply point level), which is now deployed UK-wide.

National Renewable Energy Lab, *PhD Intern*, Golden, CO, USA May–Aug 2018

- Conducted research on matrix completion methods for distribution system state estimation.

Thomas J. Watson Fellowship, *Watson Fellow*, Global Jul 2015–Aug 2016

- Conducted expert interviews on next-generation power systems in five countries (Germany, India, South Korea, Japan, and Chile), as part of a year-long travel fellowship.

Productivity and Wellness Pal, *Researcher*, Claremont, CA, USA Jan 2014–Jul 2015

- Led research on providing individualized recommendations, based on machine learning and survey data, to improve student productivity and wellness.

PotaVida, Inc., *Global Clinic Team Member*, Claremont, CA, USA Sep 2014–May 2015

- Enhanced PotaVida's low-cost solar water disinfection device as part of Global Clinic, a year-long senior capstone project at Harvey Mudd College.

Crowdy, Inc., *Lead Software Engineer*, Claremont, CA, USA Sep 2013–Aug 2014

- Developed iOS app for Crowdy, an event-based social networking platform.

Google, *Engineering Intern*, Mountain View, CA, USA May–Aug 2013

- Implemented web and Android app functionality for PACO, a user experience surveying tool.

Harvey Mudd Games Team, *Researcher*, Claremont, CA, USA Jul–Aug 2012

- Created and tested educational games for elementary and middle school students.

PROGRAM ORGANIZATION

Workshop: Tackling Climate Change with Machine Learning (co-organizer)
Forthcoming at the *Conference on Neural Information Processing Systems (NeurIPS)*, Dec 2020

Workshop: Machine Learning for Engineering Modeling, Simulation, and Design (co-organizer)
Forthcoming at the *Conference on Neural Information Processing Systems (NeurIPS)*, Dec 2020

Conference: TEDxClimateChangeAI (lead organizer)
Held as part of Countdown, TED's initiative on climate change, Oct 2020

Workshop: Tackling Climate Change with Machine Learning (lead organizer)
At the *International Conference on Learning Representations (ICLR)*, Apr 2020

Workshop: Tackling Climate Change with Machine Learning (lead organizer)
At the *Conference on Neural Information Processing Systems (NeurIPS)*, Dec 2019

Panel: AI: Applications in Climate Mitigation and Adaptation (lead organizer)
At the *United Nations Climate Change Conference (COP25)*, Dec 2019

Conference: CompSustNet Doctoral Consortium (lead organizer)
Computational Sustainability Network annual conference, Oct 2019

Seminar Series: CompSust Open Graduate Seminar (COGS) (lead organizer)
Virtual webinar for Computational Sustainability Network, 2018–present

Workshop: Climate Change: How Can AI Help? (co-organizer)
At the *International Conference on Machine Learning (ICML)*, Jun 2019

SELECTED PROFESSIONAL SERVICE

Climate Change AI, *Co-founder and Co-chair* (2018–present)
Lead organization to facilitate meaningful work in machine learning for tackling climate change.

CMU Computer Science PhD Admissions, *AI Area Reader and Diversity Analyst* (2019)
Evaluated applications, analyzed diversity, presented recommendations to departmental leadership.

CMU Computer Science Dept. Doctoral Review Committee, *Member* (2017–present)
Serve on official advisory committee to the Director of the PhD program and Department Head.

Reviewing

- Reviewer: International Conference on Machine Learning (ICML), Conference on Neural Information Processing Systems (NeurIPS), International Conference on Artificial Intelligence and Statistics (AISTATS), IEEE Transactions on Pattern Analysis and Machine Intelligence, Machine Learning for the Developing World (ML4D) workshop at NeurIPS, Women in Machine Learning (WiML) workshop, Climate Change AI workshop at ICML
- Meta Reviewer: Climate Change AI workshops at ICML and NeurIPS

TALKS

Tackling Climate Change with Machine Learning, CompSustNet Doctoral Consortium, Oct 2020
Inverse Optimal Power Flow: Assessing the Vulnerability of Power Grid Data, CMU CEIC Annual Meeting, Oct 2020
Tackling Climate Change with Machine Learning, Energy Innovation Network Enspire, Sep 2020
Tackling Climate Change with Machine Learning, Global Indian International School webinar, Jul 2020
Tackling Climate Change with Machine Learning, ACM GECCO GreenAI workshop, Jul 2020
Inverse Optimal Power Flow: Assessing the Vulnerability of Power Grid Data, International Symposium for Sustainable Systems and Technology (ISSST), Jun 2020
Climate Change 101, ICLR Tackling Climate Change with Machine Learning workshop, Jul 2020
Tackling Climate Change with Machine Learning, CMU Symposium on AI and Social Good, Apr 2020
Tackling Climate Change with Machine Learning, Engineers for a Sustainable World DigiCon, Apr 2020
Tackling Climate Change with Machine Learning, Clean Energy Leadership Institute webinar, Apr 2020
Tackling Climate Change with Machine Learning, Microsoft Research, Dec 2019
Tackling Climate Change with Machine Learning, CMU AI Seminar, Nov 2019
Tackling Climate Change with Machine Learning, University of Massachusetts, Oct 2019
Tackling Climate Change with Machine Learning, CompSustNet Doctoral Consortium, Oct 2019
Matrix Completion for Low-Observability Voltage Estimation, CMU CEIC Annual Meeting, Oct 2019
Matrix Completion for Low-Observability Voltage Estimation, CMU CEDM Seminar, Sep 2019
Inverse Optimal Power Flow, NeurIPS AI for Social Good workshop, Dec 2018

All models are wrong; let's make them useful, CMU CEIC Annual Meeting, Oct 2018
Inverse Optimal Power Flow, CompSust Open Graduate Seminar, Oct 2018
Matrix Completion for Low-Observability Voltage Estimation, CompSustNet Doctoral Consortium, Sep 2018
Optimization and machine learning for distribution system state estimation, NREL, Aug 2018
Characterizing the uncertainty in damage reductions from interventions and loads in PJM, CEDM Annual Meeting, May 2018
Characterizing Marginal Emissions Factors in PJM, CMU CEDM Seminar, Oct 2017
Characterizing Marginal Emissions Factors in PJM, CMU CEIC Annual Meeting, Oct 2017
Task-based end-to-end model learning in stochastic optimization, INFORMS, Oct 2017
Task-based Machine Learning, and Assessing Emissions Effects of Power System Interventions, Instituto Superior Técnico, Jun 2017
Assessing the Uncertainty of Emissions Reductions from Various Interventions, CMU CEDM Seminar, Apr 2017

Pingree School Commencement (commencement speaker), Jun 2019
Harvey Mudd College Convocation (alumni keynote), Aug 2017
Harvey Mudd College Convocation (student keynote), Sep 2013

POSTER PRESENTATIONS

Matrix Completion for Low-Observability Voltage Estimation, DOE CSGF Annual Meeting, Jul 2019
SATNet: Bridging deep learning and logical reasoning using a differentiable satisfiability solver, International Conference on Machine Learning (ICML), Jun 2019
Inverse Optimal Power Flow, CMU Energy Week, Mar 2019
Inverse Optimal Power Flow, Power and Energy Conference at Illinois (PECI), Feb 2019
Task-based End-to-end Model Learning in Stochastic Optimization, Women in Machine Learning (WiML) workshop, Dec 2018
Inverse Optimal Power Flow, NeurIPS Modeling the Physical World workshop, Dec 2018
Inverse Optimal Power Flow, NeurIPS AI for Social Good workshop, Dec 2018
Matrix Completion for Low-Observability Voltage Estimation, CompSustNet Doctoral Consortium, Sep 2018
Task-based End-to-end Model Learning in Stochastic Optimization, CompSustNet NSF Review, Sep 2018
Task-based End-to-end Model Learning in Stochastic Optimization, DOE CSGF Annual Meeting, Jul 2018
Task-based End-to-end Model Learning in Stochastic Optimization, Conference on Neural Information Processing Systems (NeurIPS), Dec 2017
Task-based End-to-end Model Learning in Stochastic Optimization, CompSustNet NSF Review, Oct 2017
Assessing the Uncertainty of Emissions Reductions from Various Interventions, CMU CEDM Annual Meeting, May 2017
Predicting Marginal Generators in Real Time, CMU Energy Week, Apr 2017

TEACHING

Guest Lecture: Climate Change and Machine Learning, Winchester-Thurston High School
Taught basics of machine learning and of climate change at high school class (Nov 2019).

Teaching Assistant: Graduate Artificial Intelligence, Carnegie Mellon University
Wrote homework and exam questions, held office hours, and graded (Spring 2018 semester).

Teaching Assistant: Artificial Intelligence, Harvey Mudd College
Held office hours and graded work (Fall 2014 and Spring 2015 semesters).

Teaching Assistant: Algorithms, Harvey Mudd College
Held office hours and graded work (Spring 2015 semester).

Writing Center Consultant, Harvey Mudd College
Consulted student papers and presentations, and ran writing skills workshops (Sep 2012–May 2015).

SELECTED PUBLICITY

The Interchange podcast, *Beyond Forecasting: Artificial Intelligence Is a Powerful Decarbonization Tool*, Feb 2020
Future of Life Institute podcast, *Tackling Climate Change with Machine Learning*, Oct 2019
ScienceDaily, *Are we underestimating the benefits of investing in renewable energy?*, Oct 2019
Eye On A.I. Podcast, *Climate Change and AI*, Sep 2019
National Geographic, *How artificial intelligence can tackle climate change*, Jun 2019
MIT Technology Review, *Here are 10 ways AI could help fight climate change*, Jun 2019
Pittsburgh Post-Gazette, *Pittsburgh libraries join initiative to protect data*, Apr 2017

RELEVANT COURSEWORK

Graduate

- Machine learning: Advanced Introduction to Machine Learning, Artificial Intelligence, Applied Data Analysis, Intermediate Statistics, Convex Optimization
- Energy and Climate: Engineering & Economics of Electric Energy Systems, Electricity Market Restructuring seminar, Low-Carbon Electric Power seminar, Climate Change Mitigation (audit)
- Policy: Theory & Practice in Policy Analysis, Quant. Methods for Policy Analysis, Microeconomics

Undergraduate (summary)

- Courses in computer science and pure mathematics for major in Computer Science/Math.
- Technical and social science courses for Emphasis in Environmental Analysis.
- Broad core curriculum in science, technology, and mathematics, accompanied by an extensive breadth requirement in the humanities, social sciences, and arts.

Transcripts available upon request.

OTHER ACTIVITIES

CMU Tech4Society, *Co-founder and Project Lead* (2016–present)
Provide technical and data support to local grassroots organizations.

Engineers for a Sustainable World, *New Chapter Development Director* (2016–2019)
Developed new collegiate chapters across the United States focused on sustainability and engineering.

Harvey Mudd Sustainability Committee, *Student Representative* (2014–2015)
Worked with college administration to direct and oversee the college's sustainability program.

ESW/MOSS Environmental Club, *Co-President* (2012–2014), *Member* (2011–2015)
Led projects including creation of $1M Green Fund, policy outreach, and campus awareness events.

Harvey Mudd College Honor Board, *Class Representative* (2011–2015)
Presided over hearings and participated in discussions regarding the college's honor code.

Science Bus, *Co-president* (2012–2013), *Teacher* (2011–2014)
Created, taught, and organized weekly science lessons at 18 elementary school classrooms in Pomona, CA.

ADDITIONAL INFORMATION

Spoken Languages	English (native speaker), Telugu (fluent), Spanish (basic)
Programming Languages	Python, MATLAB (proficient) C, C++, Haskell, R, SQL, Bash, Objective-C, Java (knowledgeable)
Deep Learning Frameworks	PyTorch (proficient), TensorFlow (knowledgeable)
Citizenship	USA