

Ferdinando FIORETTO

Assistant Professor

📍 Computer Science, University of Virginia, Charlottesville - VA 22903 - U.S.A.
🏠 nandofioretto.com @ fioretto@virginia.edu 📞 +1 434 982 2258

Research Interests: Machine Learning | Responsible AI | Differential Privacy | Algorithmic Fairness
AI for Science and Engineering | Differentiable Optimization | Power Systems.

PROFESSIONAL EXPERIENCE

Current Aug. 2023	University of Virginia , <i>Computer Science</i> , Charlottesville, VA ASSISTANT PROFESSOR
Jul. 2023 Jan. 2020	Syracuse University , <i>Electrical Engineering & Computer Science</i> , Syracuse, NY ASSISTANT PROFESSOR

EDUCATION

Dec. 2019 Sep. 2018	Georgia Institute of Technology , <i>School of Industrial and System Engineering</i> , Atlanta, GA POST-DOCTORAL RESEARCHER
Dec. 2018 Sep. 2016	University of Michigan , <i>Industrial and Operations Engineering</i> , Ann Arbor, MI RESEARCH FELLOW
Aug. 2016	University of Udine ¹ , <i>Computer Science</i> , Udine, IT PH.D. IN COMPUTER SCIENCE (WITH MS IN 2012)
Nov. 2009	University of Parma , <i>Computer Science & Mathematics</i> , Parma, IT BS. IN COMPUTER SCIENCE

SELECTED HONORS AND AWARDS

- 2022 **Amazon Research Award**, Amazon – AWS AI (Fairness). [🔗 Press](#)
 - Project name: “Toward Understanding the Unintended Disparate Impacts of Private Machine Learning Systems”.
 - The Amazon Research Awards is a competitive global program which offers unrestricted funds and AWS Promotional Credits to support research at academic institutions and non-profit organizations in areas that align Amazon’s mission to advance science.
- 2022 **NSF CAREER Award**, National Science Foundation. [🔗 Press](#)
 - The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation’s most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization. Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research.
- 2022 **Caspar Bowden PET Award**, Privacy Enhancing Technologies (PETs). [🔗 Link](#)
 - The Caspar Bowden PET award for Outstanding Research in Privacy Enhancing Technologies is presented annually to researchers whose work makes an outstanding contribution to the theory, design, implementation, or deployment of privacy enhancing technology. The 2022 award was selected among all qualifying papers (published in **any** venue in the years 2020–2021).
 - The award letter reads: “Your paper [Decision Making with Differential Privacy under the Fairness Lens](#) received the award especially for advancing the understanding of DP and fairness trade-offs in decision making, providing a theoretical framework and exploring a highly relevant practical problem.”
- 2022 **Google Research Scholar Award**, Google (Privacy). [🔗 Link](#)

1. Dual degree with New Mexico State University

- Project name : “**Equity of Differentially Private Decision Processes**”.
 - The Research Scholar Program provides unrestricted gifts to support research at institutions around the world, and is focused on funding world-class research conducted by early-career professors.
- 2022 **Early Career Spotlight**, International Joint Conference on Artificial Intelligence (IJCAI). [🔗 Link](#)
 - The IJCAI Early Career Spotlight talks are aimed at providing an accessible introduction to the research directions of some of the most active early career researchers in AI. The talks are by invitation, based on nominations from the IJCAI program committee.
- 2022 **Best Paper Award**, IEEE Transaction of Power System. [🔗 Link](#)
 - For paper : “**Differentially Private Optimal Power Flow for Distribution Grids**”.
 - This highly selective award was assigned to eight out of all IEEE-TPS papers published in 2019–2021.
- 2021 **Early Career Researcher Award**, Association for Constraint Programming. [🔗 Link](#)
 - The Early Career Research Award is assigned by the Association for Constraint Programming to early career researchers for their contributions to constrained optimization.
 - In particular, this *inaugural* award was given “for contribution to constraint programming and, in particular, fundamental advances in distributed constraint satisfaction, constraint-based differential privacy, fairness in artificial intelligence, and their applications in energy, mobility, and census data.”
- 2021 **Mario Gerla Young Investigator Award**, ISSNAF. [🔗 Press](#)
 - Established by the Gerla family in 2019 in memory of Dr. Mario Gerla, professor of Computer Science at UCLA, the Italian Scientists and Scholars in North America Foundation confers the *Young Investigator Awards* every year to outstanding, early-career, Italian researchers working in North America, in recognition of their significant and innovative contributions to computer science. The award is conferred in coordination with the Italian Embassy in US.
- 2021 **Best Paper Award**, IEEE Transaction of Power System. [🔗 Link](#)
 - For paper : “**Privacy-Preserving Power System Obfuscation : A Bilevel Optimization Approach**”.
 - This highly selective award was assigned to seven out of all IEEE-TPS papers published in 2018–2020.
- 2017 **Best AI Dissertation Award**, AI*IA. [🔗 Press](#)
 - For Thesis “**Exploiting the Structure of Distributed Constraint Optimization Problems with Applications in Smart Grids.**”
 - The “Marco Cadoli” Best AI dissertation is assigned by the Italian Association for Artificial Intelligence (AI*IA) to a Ph.D. doctor who have obtained the title in an Italian University based on the quality and impact of the thesis work.
- 2017 **Most Visionary Workshop Paper Award**, International Conference of Autonomous Agents and Multiagent Systems (AAMAS). [🔗 Link](#)
 - For paper “**A Realistic Dataset for the Smart Home Device Scheduling Problem for DCOPs**”.
- 2013 **Best Student Paper Award**, Computational Methods in System Biology (CMSB). [🔗 Link](#)
 - For paper “**Constraint Programming in Community-based Gene Regulatory Network Inference**”.

OTHER AWARDS

- 2023 **ICLR Notable Reviewer Award**, International conference on Learning Representations (ICLR). [🔗 Link](#)
- 2023 **NMSU CS Star Award**, New Mexico State University (NMSU). [🔗 Link](#)
- 2022 **Lightning Talk (Spotlight)**, Conference on Neural Information Processing Systems (NeurIPS). [🔗 Link](#)
 - Highly selective process assigned to typically ~3% out of all paper submissions (10,411, in 2022)).
- 2022 **Top Reviewer Award**, Conference on Neural Information Processing Systems (NeurIPS). [🔗 Link](#)
- 2021 **Outstanding Reviewer Award**, Conference on Neural Information Processing Systems (NeurIPS). [🔗 Link](#)
- 2020 **Differentially Private Temporal Map Challenge Award**, \$5000, NIST. [🔗 Press](#)
- 2020 **Young Investigator Award Nomination**, ISSNAF. [🔗 Press](#)
- 2019 **Invited journal paper**, International Joint Conference on Artificial Intelligence (IJCAI). [🔗 Link](#)
- 2016 **Top Graduate Student Honor’s Cord**, NMSU.
- 2014 **Outstanding Research Assistant Award**, Computer Science, NMSU. [🔗 Press](#)
- 2014 **Outstanding Teaching Assistant Nomination**, NMSU.
- 2013 **Ph.D. Scholarship Award** (~\$50,000), University of Udine.
- 2013 **Outstanding Teaching Assistant Award**, Computer Science, NMSU. [🔗 Press](#)
- 2013 **Computer Science Scholarship** (\$1500), NMSU.
- 2012 **Honors Graduate Recognition for Outstanding Academic Success**, NMSU.


2008 Erasmus Scholarship (~ \$14,000), University of Leeds.


TRAVEL GRANTS



AAAI'20 Tutorial and Workshops (2020), AAAI'18 Tutorial Grant (2018), CP'16 Travel Support (2016), IJCAI'16 Travel Support (2016), AAMAS'16 Travel Support (2016), CP'15 Travel Support (2015), AAMAS'15 Travel Support (2015), AAAI/SIGAI Doctoral Consortium Travel Support (2015), CP'14 Travel Support (2014), CMSB'13 Conference Funding (2013), RR'13 NFS Travel Support (2013), ASNMSU Conference Funding (2012,2013,2014,2015), NMSU Graduate Student Travel Grant (2012).

PUBLICATIONS

Summary: > 13 Journals articles > 59 Conference papers > 2 Book chapters > 3 Editorial articles
> 19 Workshop papers > 20+ Preprints

Total citations: 1819 **H-index:** 23  [Google Scholar](#)

Names of students I supervise(d) are prepended with symbol .

116. Mostafa Mohammadian, Kyri Baker, **Ferdinando Fioretto**.
"Gradient-Enhanced Physics-Informed Neural Networks for Power Systems Operational Support".
Electric Power Systems Research, pages 109551, 2023. 
115.  Cuong Tran and **Ferdinando Fioretto**.
"Data Minimization at Inference Time".
Proceedings of the Conference on Neural Information Processing Systems (NeurIPS). 
114. Vladimir Dvorkin and **Ferdinando Fioretto**.
"Price-Aware Deep Learning for Electricity Markets".
Tackling Climate Change with Machine Learning, at NeurIPS 2023. 
113.  My H. Dinh, **Ferdinando Fioretto**, Mostafa Mohammadian, and Kyri Baker.
"An Analysis of the Reliability of AC Optimal Power Flow Deep Learning Proxies".
IEEE PES Innovative Smart Grid Technologies, 2023. 
112.  James Kotary,  My H. Dinh, **Ferdinando Fioretto**.
"Folded Optimization for End-to-End Model-Based Learning".
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2023. 
111.  James Kotary,  Vincenzo Di Vito, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"SF-PATE : Scalable, Fair, and Private Aggregation of Teacher Ensembles".
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2023. 
110.  Cuong Tran,  Keyu Zhu, **Ferdinando Fioretto**.
"End-to-End Combinatorial Ensemble Learning".
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2023. 
109.  Cuong Tran, **Ferdinando Fioretto**.
"On the Fairness Impacts of Private Ensembles Models".
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2023. 
108. Terrence W.K. Mak, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Load Encoding for Learning AC-OPF".
Proceedings of the IEEE PES General Meeting (PES), 2023. 
107.  James Kotary,  Vincenzo Di Vito, **Ferdinando Fioretto**.
"End-to-End Optimization and Learning for Multiagent Ensembles".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2023.

106. Jayanta Mandi,  James Kotary, Senne Berden, Maxime Mulamba, Victor Bucarey, Tias Guns, **Ferdinando Fioretto**.
"Decision-Focused Learning : Foundations, State of the Art, Benchmark and Future Opportunities".
CoRR abs/2307.13565, 2023. 

105. Khang Tran, **Ferdinando Fioretto**, Issa Khalil, My T. Thai, NhatHai Phan.
"FairDP: Certified Fairness with Differential Privacy".
 CoRR abs/2305.16474, 2023. [🔗](#)
104. Keyu Zhu, **Ferdinando Fioretto**, Pascal Van Hentenryck, Saswat Das, Christine Task.
"Privacy and Bias Analysis of Disclosure Avoidance Systems".
 CoRR abs/2301.12204, 2023. [🔗](#)
103.  My H. Dinh, **Ferdinando Fioretto**.
"Context-Aware Differential Privacy for Language Modeling".
 CoRR abs/2301.12288, 2023. [🔗](#)
102. Khoi D. Hoang, **Ferdinando Fioretto**, Ping Hou, William Yeoh, Makoto Yokoo, Roie Zivan.
"Proactive Dynamic Distributed Constraint Optimization Problems".
 Journal of Artificial Intelligence Research (JAIR), (73), pages 179-225, 2022. [🔗](#)
101.  Cuong Tran, **Ferdinando Fioretto**, Jung-Eun Kim,  Rakshit Naidu.
 *"Pruning has a disparate impact on model accuracy"*.
 Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2022. [🔗](#)
Lightning Talk (Spotlight) (Typically assigned to ~3% out of all paper submissions (10,411, in 2022)).
100. Keyu Zhu, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Post-processing of Differentially Private Data: A Fairness Perspective".
 Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2022. [🔗](#)
99. **Ferdinando Fioretto**,  Cuong Tran, Keyu Zhu, Pascal Van Hentenryck.
"Differential Privacy and Fairness in Decisions and Learning Tasks: A Survey".
 Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2022. [🔗](#)
98. **Ferdinando Fioretto**.
 *"Integrating Machine Learning and Optimization to Boost Decision Making"*.
 Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2022. [🔗](#)
Early Career Spotlight (Accompanying paper).
97.  James Kotary, **Ferdinando Fioretto**, Pascal Van Hentenryck, Ziwei Zhu.
"End-to-end Learning for Fair Ranking Systems".
 Proceedings of the ACM Web Conferences (WWW), 2022. [🔗](#)
96.  James Kotary, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Fast Approximations for Job Shop Scheduling: A Lagrangian Dual Deep Learning Method".
 Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 2022. [🔗](#)
95. Lesia Mitridati, Emma Romei, Gabriela Hug, **Ferdinando Fioretto**.
"Differentially-Private Heat and Electricity Markets Coordination".
 Proceedings of the International Conference on Probabilistic Methods Applied to Power Systems (PMAPS), 2022. [🔗](#)
94. Mostafa Mohammadian, Kyri Baker,  My H. Dinh, **Ferdinando Fioretto**.
"Learning Solutions for Intertemporal Power Systems Optimization with Recurrent Neural Networks".
 Proceedings of the International Conference on Probabilistic Methods Applied to Power Systems (PMAPS), 2022. [🔗](#)
93. **Ferdinando Fioretto**, et al..
"Reports of the Workshops Held at the 2022 AAAI Conference on Artificial Intelligence".
 AI Magazine, 2022. [🔗](#)
92.  Cuong Tran,  My H. Dinh, **Ferdinando Fioretto**.
 *"A Fairness Analysis on Private Aggregation of Teacher Ensembles"*.
 AAAI Workshop on Privacy Preserving Artificial Intelligence (PPAI)–at AAAI, 2022. [🔗](#)
Spotlight Paper.
91.  Cuong Tran, Keyu Zhu, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Fairness Increases Adversarial Vulnerability".
 CoRR abs/2211.11835, 2022. [🔗](#)

90. Mostafa Mohammadian, Kyri Baker, **Ferdinando Fioretto**.
"Gradient-Enhanced Physics-Informed Neural Networks for Power Systems Operational Support".
 CoRR abs/2206.10579, 2022. [🔗](#)
89. Sawinder Kaur, **Ferdinando Fioretto**, Asif Salekin.
"Deadwooding : Robust Global Pruning for Deep Neural Networks".
 CoRR abs/2202.05226, 2022. [🔗](#)
88. **Ferdinando Fioretto**, Pascal Van Hentenryck, Keyu Zhu.
"Differential Privacy of Hierarchical Census Data : An Optimization Approach".
Artificial Intelligence Journal (AIJ), (296), pages 103475, 2021. [🔗](#)
87. Vladimir Dvorkin, **Ferdinando Fioretto**, Pascal Van Hentenryck, Pierre Pinson, Jalal Kazempour.
 *"Differentially Private Optimal Power Flow for Distribution Grids"*.
IEEE Transactions on Power Systems, 36(3), pages 2186–2196, 2021. [🔗](#)
Best IEEE TPS paper award (given to 8 out of all TPS papers published in 2019–2021).
86.  Cuong Tran,  My H. Dinh, **Ferdinando Fioretto**.
"Differentially Private Deep Learning under the Fairness Lens".
Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2021. [🔗](#)
85.  James Kotary, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Learning Hard Optimization Problems : A Data Generation Perspective".
Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2021. [🔗](#)
84.  Cuong Tran, **Ferdinando Fioretto**, Pascal Van Hentenryck,  Zhiyan Yao.
 *"Decision Making with Differential Privacy under the Fairness Lens"*.
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 560–566, 2021. [🔗](#)
2022 Caspar Bowden PET Award (Selected among all papers about Privacy Enhancing Technologies published in international conferences between 2020–2022.).
83.  James Kotary, **Ferdinando Fioretto**, Pascal Van Hentenryck, Bryan Wilder.
"End-to-End Constrained Optimization Learning : A Survey".
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 4475–4482, 2021. [🔗](#)
82. Keyu Zhu, Pascal Van Hentenryck, **Ferdinando Fioretto**.
"Bias and Variance of Post-processing in Differential Privacy".
Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 11177–11184, 2021. [🔗](#)
81.  Cuong Tran, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Differentially Private and Fair Deep Learning : A Lagrangian Dual Approach".
Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), 9932–9939, 2021. [🔗](#)
80.  Anudit Nagar,  Cuong Tran, **Ferdinando Fioretto**.
"A Privacy-Preserving and Accountable Multi-agent Learning Framework".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 1605–1606, 2021. [🔗](#)
79. **Ferdinando Fioretto**.
"Constrained-based Differential Privacy".
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), 1868–8969, 2021. [🔗](#)
78. Vladimir Dvorkin, **Ferdinando Fioretto**, Pascal Van Hentenryck, Jalal Kazempour, Pierre Pinson.
"Differentially Private Optimal Power Flow for Distribution Grids".
IEEE PowerTech, 2021. [🔗](#)
77. **Ferdinando Fioretto**, et al..
"Reports of the Workshops Held at the 2021 AAAI Conference on Artificial Intelligence".
AI Magazine, 2021. [🔗](#)
76.  Cuong Tran, **Ferdinando Fioretto**.
"Decision Making with Differential Privacy under the Fairness Lens".
 Theory and Practice of Differential Privacy (TPDP) – at ICML, 2021. [🔗](#)

75.  Anudit Nagar,  Cuong Tran, **Ferdinando Fioretto**.
"A Privacy-Preserving and Accountable Multi-agent Learning Framework".
 International Workshop on Learning and Optimization in Multi-Agent Systems (OPTLearnMAS)–at AAMAS, 2021. [🔗](#)
74.  Cuong Tran, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Differentially Private and Fair Deep Learning : A Lagrangian Dual Approach".
 AAAI Workshop on Privacy Preserving Artificial Intelligence (PPAI)–at AAAI, 2021. [🔗](#)
73.  My H. Dinh, **Ferdinando Fioretto**, Mostafa Mohammadian, Kyri Baker.
"Towards Understanding the Unreasonable Effectiveness of Learning AC-OPF Solutions".
 CoRR abs/2111.11168, 2021. [🔗](#)
72.  Cuong Tran,  My H. Dinh,  Kyle Beiter, **Ferdinando Fioretto**.
"A Fairness Analysis on Private Aggregation of Teacher Ensembles".
 CoRR abs/2109.08630, 2021. [🔗](#)
71.  Cuong Tran,  My H. Dinh, **Ferdinando Fioretto**.
"Differentially Private Deep Learning under the Fairness Lens".
 CoRR abs/2106.02674, 2021 (extended NeurIPS-21 version). [🔗](#)
70.  Anudit Nagar,  Cuong Tran, **Ferdinando Fioretto**.
"A Privacy-Preserving and Trustable Multi-agent Learning Framework".
 CoRR abs/2106.01242, 2021. (extended AAMAS-21 version). [🔗](#)
69.  James Kotary, **Ferdinando Fioretto**, Pascal Van Hentenryck, Bryan Wilder.
"End-to-End Constrained Optimization Learning : A Survey".
 CoRR abs/2103.16378, 2021. (extended IJCAI-21 version). [🔗](#)
68. Terrence W.K. Mak, **Ferdinando Fioretto**, Pascal VanHentenryck.
"Load Embeddings for Scalable AC-OPF Learning".
 CoRR abs/2101.03973, 2021. [🔗](#)
67. **Ferdinando Fioretto**, et al..
"Reports of the Workshops Held at the 2020 International Association for the Advancement of Artificial Intelligence Conference on Web and Social Media".
 AI Magazine, 41(4) 2020. [🔗](#)
66. **Ferdinando Fioretto**,  Cuong Tran, Pascal Van Hentenryck.
"Lagrangian Duality for Constrained Deep Learning".
 INFORMS, 2020. [🔗](#)
65. Lesia Mitridati, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Differential Privacy For Stackelberg Games : An Application To Gas And Electricity Markets".
 INFORMS, 2020. [🔗](#)
64. Keyu Zhu, Pascal Van Hentenryck, **Ferdinando Fioretto**.
"Bias and Variance of Post-processing in Differential Privacy".
 CoRR abs/2010.04327, 2020 (extended AAAI-21 version). [🔗](#)
63. Minas Chatzos, **Ferdinando Fioretto**, Terrence W.K. Mak, Pascal Van Hentenryck.
"High-Fidelity Machine Learning Approximations of Large-Scale Optimal Power Flow".
 CoRR abs/2006.16356, 2020. [🔗](#)
62. Vladimir Dvorkin, **Ferdinando Fioretto**, Pascal Van Hentenryck, Jalal Kazempour, Pierre Pinson.
"Differentially Private Convex Optimization with Feasibility Guarantees".
 CoRR abs/2006.12338, 2020. [🔗](#)
61. **Ferdinando Fioretto**, Terrence W.K. Mak, Pascal Van Hentenryck.
"Differential Privacy for Power Grid Obfuscation".
 IEEE Transactions on Smart Grids, 11(2), pages 1356–1366, 2020. [🔗](#)
60. Terrence W.K. Mak, **Ferdinando Fioretto**,  Lyndon Shi, Pascal Van Hentenryck.
 *"Privacy-Preserving Power System Obfuscation : A Bilevel Optimization Approach"*.
 IEEE Transactions on Power Systems, 35(2), pages 1627–1637, 2020. [🔗](#)

Best IEEE TPS paper award (given to 7 out of all TPS papers published in 2018–2020).

59. **Ferdinando Fioretto**, Pascal Van Hentenryck, Terrence W.K. Mak,  Cuong Tran, Federico Baldo, Michele Lombardi.
"A Lagrangian Dual Framework for Deep Neural Networks with Constraints".
Proceedings of the European Conference on Machine Learning (ECML), 18–135, 2020. [🔗](#)
58. **Ferdinando Fioretto**, Lesia Mitridati, Pascal Van Hentenryck.
"Differential Privacy Stackelberg Games".
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 3480–3486, 2020. [🔗](#)
57. **Ferdinando Fioretto**, Pascal Van Hentenryck.
 *"OptStream : Releasing Time Series Privately"*.
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 5135–5139, 2020. [🔗](#)
Invited to the IJCAI journal track.
56. Terrence W.K. Mak, **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Privacy-Preserving Obfuscation for Distributed Power Systems".
Proceedings of the Power Systems Computation Conference (PSCC), 2020. [🔗](#)
55. **Ferdinando Fioretto**, Terrence W.K. Mak, Pascal Van Hentenryck.
"Predicting AC Optimal Power Flows : Combining Deep Learning and Lagrangian Dual Methods".
Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), pages 630–637, 2020. [🔗](#)
54. Atena Tabakhi, William Yeoh, **Ferdinando Fioretto**.
"The Smart Appliance Scheduling Problem : A Bayesian Optimization Approach".
Proceedings of the International Conference on Principles and Practice of Multi-Agent Systems (PRIMA), 100–115, 2020. [🔗](#)
53. **Ferdinando Fioretto**, Pascal Van Hentenryck.
 *"OptStream : Releasing Time Series Privately"*.
Journal of Artificial Intelligence Research (JAIR), (65) pages 423–456, 2019. [🔗](#)
Invited to IJCAI 2020 journal track.
52. **Ferdinando Fioretto**, Agostino Dovier, Enrico Pontelli.
 *"Distributed Multi-Agent Optimization for Smart Grids and Home Automation"*.
Intelligenza Artificiale (IA), 12 (2), pages : 67–87, 2019. [🔗](#)
Best 2018 Thesis in Artificial Intelligence (AI*IA) (Accompanying paper).
51. **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Privacy-Preserving Federated Data Sharing".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 638–646, 2019. [🔗](#)
50. **Ferdinando Fioretto**, Terrence W.K. Mak, Pascal Van Hentenryck.
"Privacy-Preserving Obfuscation of Critical Infrastructure Networks".
Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), pages 1086–1092, 2019. [🔗](#)
49. **Ferdinando Fioretto**, Pascal Van Hentenryck.
 *"Differential Privacy of Hierarchical Census Data : An Optimization Approach"*.
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), pages 639–655, 2019. [🔗](#)
Invited to Constraint journal (selected papers – declined).
48. Khoi Hoang, **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli, Roie Zivan.
"A Large Neighboring Search Schema for Multi-Agent Optimization".
International Workshop on Optimization in Multi-Agent Systems (OPTMAS)–at AAMAS, 2019. [🔗](#)
47. **Ferdinando Fioretto**, Terrence W.K. Mak, Pascal Van Hentenryck.
"Predicting AC Optimal Power Flows : Combining Deep Learning and Lagrangian Dual Methods".
CoRR abs/1909.10461, 2019 (extended AAAI-20 version). [🔗](#)
46. **Ferdinando Fioretto**, Terrence W. K. Mak, Pascal Van Hentenryck.
"Privacy-Preserving Obfuscation of Critical Infrastructure Networks".

- CoRR abs/1905.09778, 2019 (extended IJCAI-19 version). [↗](#)
45. **Ferdinando Fioretto**, Enrico Pontelli, William Yeoh.
"Distributed Constraint Optimization Problems and Applications : A Survey".
Journal of Artificial Intelligence Research (JAIR), 61, pages 623–698, 2018. [↗](#)
 44. **Ferdinando Fioretto**, William Yeoh.
"AI Buzzwords Explained : Distributed Constraint Optimization Problems".
AI Matters, 3 (4), pages 8–13, 2018. [↗](#)
 43. **Ferdinando Fioretto**, Enrico Pontelli, William Yeoh, Rina Dechter.
"Accelerating Exact and Approximate Inference for (Distributed) Discrete Optimization with GPUs".
Constraints, 23 (1), pages 1–43, 2018. [↗](#)
 42. **Ferdinando Fioretto**, Hong Xu, Sven Koenig, TK Satish Kumar.
"Solving Multiagent Constraint Optimization Problems on the Constraint Composite Graph".
Proceedings of the International Conference on Principles and Practice of Multi-Agent Systems (PRIMA), pages 106–122, 2018. [↗](#)
 41. **Ferdinando Fioretto**, Chansoo Lee, Pascal Van Hentenryck.
"Constrained-based Differential Privacy for Private Mobility".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 1405–1413, 2018. [↗](#)
 40. Khoi Hoang, **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli, Roie Zivan.
"A Large Neighboring Search Schema for Multi-Agent Optimization".
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), pages 688–706, 2018. [↗](#)
 39. **Ferdinando Fioretto**, Pascal Van Hentenryck.
"Constrained-based Differential Privacy : Releasing Optimal Power Flow Benchmarks Privately".
Proceedings of the International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR), pages 215–231, 2018. [↗](#)
 38. **Ferdinando Fioretto**, Hong Xu, Sven Koenig, TK Satish Kumar.
"Constraint Composite Graph-Based Lifted Message Passing for Distributed Constraint Optimization Problems".
International Symposium on Artificial Intelligence and Mathematics (ISAIM), 2018. [↗](#)
 37. **Ferdinando Fioretto**, Hong Xu, Sven Koenig, TK Satish Kumar.
"Solving Multiagent Constraint Optimization Problems on the Constraint Composite Graph".
International Workshop on Optimisation in Multi-Agent Systems (OptMAS)–at AAMAS, 2018. [↗](#)
 36.  William Kluegel,  Muhammad A. Iqbal, **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli.
 *"A Realistic Dataset for the Smart Home Device Scheduling Problem for DCOPs"*.
Lecture Notes in Computer Science (LNCS), LNCS, volume 10643 pages 125–142, Springer, 2017. [↗](#)
Visionary Paper Award (AAMAS workshop series).
 35. Moinul M.P. Chowdhury, Russell Y. Folk, **Ferdinando Fioretto**, Christopher Kiekintveld, William Yeoh.
"Investigation of Learning Strategies for the SPOT Broker in Power TAC".
AgentMediated Electronic Commerce : Designing Trading Strategies and Mechanisms for Electronic Markets, volume 271 of **Lecture Notes in Business Information Processing**, pages 96–111, Springer, 2017. [↗](#)
 34. **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli, Ye Ma, Satishkumar J. Ranade.
"A Distributed Constraint Optimization (DCOP) Approach to the Economic Dispatch with Demand Response".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 999–1007, 2017. [↗](#)
 33. **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli.
"A Multiagent System Approach to Scheduling Devices in Smart Homes".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 981–989, 2017. [↗](#)
 32. Khoi Hoang, Ping Hou, **Ferdinando Fioretto**, Makoto Yokoo, William Yeoh, Roie Zivan.
"Infinite-Horizon Proactive Dynamic DCOPs".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 212–220, 2017. [↗](#)
 31. Atena M. Tabakhi, Tiep Le, **Ferdinando Fioretto**, William Yeoh.

- "Preference Elicitation for DCOPs".*
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), pages 278–296, 2017. [🔗](#)
30. William Kluegel, Muhammad Aamir Iqbal, **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli.
"A Realistic Dataset for the Smart Home Device Scheduling Problem for DCOPs".
International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)–at AAMAS, 2017. [🔗](#)
 29. **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli.
"A Multiagent System Approach to Scheduling Devices in Smart Homes".
Workshop on AI for Smart Grids and Smart Buildings (AISGSB)–at AAI, 2017. [🔗](#)
 28. Khoi Hoang, **Ferdinando Fioretto**, Ping Hou, Makoto Yokoo, William Yeoh, Roie Zivan.
"Proactive Dynamic Distributed Constraint Optimization Problems".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 597–605, 2016. [🔗](#)
 27. Tiep Le, **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli, Tran Cao Son.
"ER-DCOPs : A Framework for Distributed Constraint Optimization Problems With Uncertainty".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 606–614, 2016. [🔗](#)
 26. **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli.
"Multi-Variable Agent Decompositions for DCOPs".
Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), pages 2480–2486, 2016. [🔗](#)
 25. **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli.
"A Dynamic Programming-Based MCMC Framework for Solving DCOPs with GPUs".
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), pages 813–831, 2016. [🔗](#)
 24. Atena M. Tabakhi, **Ferdinando Fioretto**, William Yeoh.
"A Preliminary Study on Preference Elicitation in DCOPs for Scheduling Devices in Smart Buildings".
10th Workshop on Advances in Preference Handling (MPREF)–at IJCAI, 2016. [🔗](#)
 23. Porag Chowdhury, Russell Y. Folk, **Ferdinando Fioretto**, Christopher Kiekintveld, William Yeoh.
"Investigation of Learning Strategies for the SPOT Broker in Power TAC".
International Workshop on Agent Mediated Electronic Commerce and Trading Agents Design and Analysis (AMEC/TADA)–at AAMAS, 2016. [🔗](#)
 22. Khoi Hoang, **Ferdinando Fioretto**, Ping Hou, Makoto Yokoo, William Yeoh, Roie Zivan.
"Proactive Dynamic DCOPs".
Workshop on AI for Smart Grids and Smart Buildings (AISGSB)–at AAI, 2016. [🔗](#)
 21. **Ferdinando Fioretto**, Agostino Dovier, Enrico Pontelli.
"Constrained Community-based Gene Regulatory Network Inference".
ACM Transactions on Modeling and Computer Simulation (TOMACS), 25 (2), pages 11:1–11:26, 2015. [🔗](#)
 20. **Ferdinando Fioretto**, Tiep Le, Enrico Pontelli, William Yeoh, Tran Cao Son.
"Exploiting GPUs in Solving (Distributed) Constraint Optimization Problems with Dynamic Programming".
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), pages 121–139, 2015. [🔗](#)
 19. **Ferdinando Fioretto**, Federico Campeotto, Agostino Dovier, Enrico Pontelli, William Yeoh.
"Large Neighborhood Search with Quality Guarantees for Distributed Constraint Optimization Problems".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 1835–1836, 2015. [🔗](#)
 18. **Ferdinando Fioretto**, William Yeoh, Enrico Pontelli.
"Multi-Variable Agents Decomposition for DCOPs to Exploit Multi-Level Parallelism".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 1823–1824, 2015. [🔗](#)
 17. **Ferdinando Fioretto**.
"Exploiting the Structure of Distributed Constraint Optimization Problems".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages 2007–2008, 2015. [🔗](#)

16. **Ferdinando Fioretto**.
"Exploiting the Structure of Distributed Constraint Optimization Problems".
Proceedings of the AAAI Conference on Artificial Intelligence (AAAI), pages 4233–4234, 2015. [🔗](#)
15. **Ferdinando Fioretto**, Federico Campeotto, Agostino Dovier, Enrico Pontelli, William Yeoh.
"Large Neighborhood Search with Quality Guarantees for Distributed Constraint Optimization Problems".
 In *International Workshop on Optimization in Multi-Agent Systems (OptMAS)– at AAMAS*, 2015. [🔗](#)
14. **Ferdinando Fioretto**, Tiep Le, William Yeoh, Enrico Pontelli, Tran Cao Son.
"Improving DPOP with Branch Consistency for Solving Distributed Constraint Optimization Problems".
 In *International Workshop on Optimization in Multi-Agent Systems (OptMAS)– at AAMAS*, 2015. [🔗](#)
13. (α - β) Federico Campeotto, Agostino Dovier, **Ferdinando Fioretto**, Enrico Pontelli.
"A GPU Implementation of Large Neighborhood Search for Solving Constraint Optimization Problems".
Proceedings of the European Conference of Artificial Intelligence (ECAI), pages 189–194, 2014. [🔗](#)
12. **Ferdinando Fioretto**, Tiep Le, William Yeoh, Enrico Pontelli, Tran Cao Son.
"Improving DPOP with Branch Consistency for Solving Distributed Constraint Optimization Problems".
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP),
 pages 307–323, 2014. [🔗](#)
11. (α - β) Federico Campeotto, Alessandro Dal Palù, Agostino Dovier, **Ferdinando Fioretto**, Enrico Pontelli.
"Exploring the Use of GPUs in Constraint Solving".
Proceedings of the Practical Aspects of Declarative Languages (PADL), pages 152–167, 2014. [🔗](#)
10. **Ferdinando Fioretto**, Federico Campeotto, Luca Da Rin Fioretto, William Yeoh, Enrico Pontelli.
"GD-Gibbs : A GPU-based Sampling Algorithm for Solving Distributed Constraint Optimization Problems".
Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS), pages
 1339–1340, 2014. [🔗](#)
9. (α - β)² Federico Campeotto, Alessandro Dal Palù, Agostino Dovier, **Ferdinando Fioretto**, Enrico Pontelli.
"A Constraint Solver for Flexible Protein Models".
Journal of Artificial Intelligence Research (JAIR), 48, pages 953–1000, 2013. [🔗](#)
8. **Ferdinando Fioretto**, Enrico Pontelli.
 *"Constraint Programming in Community-based Gene Regulatory Network Inference"*.
Proceedings of the Computational Methods in System Biology (CMSB), pages 135–149, 2013. [🔗](#)
Best Student Paper Award .
7. (α - β) Federico Campeotto, Alessandro Dal Palù, Agostino Dovier, **Ferdinando Fioretto**, Enrico Pontelli.
"A Filtering Technique for Fragment Assembly-based Proteins Loop Modeling with Constraints".
Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP),
 pages 850–866, 2012. [🔗](#)
6. Michael R. Best, **Ferdinando Fioretto**, Alessandro Dal Palù, Enrico Pontelli, Tran Son, TuShun R. Powers, Elba E. Serrano.
"The role of secondary and tertiary structure prediction in determining the function of novel genes found in Xenopus Leavis".
Neuroscience, 2011, (518.20/ZZ45). [🔗](#)
5. (α - β) Federico Campeotto, Alessandro Dal Palù, Agostino Dovier, **Ferdinando Fioretto**, Enrico Pontelli.
"Experimenting with FIASCO for protein structure prediction".
Workshop on Constraint Based Methods for Bioinformatics (WCB)–at CP, 2014. [🔗](#)
4. (α - β) Federico Campeotto, Alessandro Dal Palù, Agostino Dovier, **Ferdinando Fioretto**, Enrico Pontelli.
"Towards a complete constraint solver on GPU".
 In *Workshop on Parallel Methods for Search & Optimization (ParSearchOpt)–at ECAI*, 2014. [🔗](#)
3. **Ferdinando Fioretto**, Enrico Pontelli.
"Community-based Gene Regulatory Network Inference via Constraint Programming".
Workshop on Constraint Based Methods for Bioinformatics (WCB)–at CP, 2013. [🔗](#)
2. (α - β) Federico Campeotto, Alessandro Dal Palù, Agostino Dovier, **Ferdinando Fioretto**, Enrico Pontelli.
"Protein Loop Modelling via Constraints and Fragment Assembly".

2. Author list is order alphabetically.

Workshop on Constraint Based Methods for Bioinformatics (WCB)–at CP, 2012. [↗](#)

1. (α - β) Michael R. Best, Kabi Bhattarai, Federico Campeotto, Alessandro Dal Palù, Hung Dang, Agostino Dovier, **Ferdinando Fioretto**, Federico Fogolari, Tiep Le, Enrico Pontelli.
“Introducing FIASCO : Fragment-based Interactive Assembly for protein Structure prediction with Constraints”.
Workshop on Constraint Based Methods for Bioinformatics (WCB)–at CP, 2011. [↗](#)

TEACHING

Artificial Intelligence (CS 4710), *University of Virginia*

Fall 2023 |

Security and Privacy of Machine Learning (CS 700), *Syracuse University*

Spring 2020 | COURSE EVALUATION : 4.55/5.00 (median 5.00)

Spring 2021 | COURSE EVALUATION : 4.46/5.00 (median 5.00)

Spring 2022 | COURSE EVALUATION : 4.93/5.00 (median 5.00)

Introduction to Artificial Intelligence (CIS 467), *Syracuse University*

Fall 2020 | COURSE EVALUATION : 4.56/5.00 (median 5.00)

Fall 2021 | COURSE EVALUATION : 4.48/5.00 (median 5.00)

Fall 2022 | COURSE EVALUATION : 4.45/5.00 (median 5.00)

Fall 2023 | COURSE EVALUATION : 4.15/5.00 (median 5.00)

Discrete Mathematics (CS 375), *Syracuse University*

Spring 2023 | COURSE EVALUATION : 4.60/5.00 (median 5.00)

MENTORING

PhD Students

- > **James Kotary** (SYRACUSE UNIVERSITY, CISE) *Fall 2020 – current*
RESEARCH : Integration of Deep Learning and Optimization.
- > **Vincenzo Di Vito** (SYRACUSE UNIVERSITY CISE) *Fall 2022 – current*
RESEARCH : Physics Informed Machine Learning.
- > **My Dinh** (SYRACUSE UNIVERSITY CISE) *Spring 2021 – current*
RESEARCH : Deep Learning, Optimization, Fairness.
- > **Saswat Das** (UNIVERSITY OF VIRGINIA CS) *Fall 2023 – current*
RESEARCH : Responsible AI, Differential Privacy.
- > **Jacob K. Christopher** (UNIVERSITY OF VIRGINIA CS) *Fall 2023 – current*
RESEARCH : Responsible AI in Generative Models.
- > **Cuong Tran** (SYRACUSE UNIVERSITY, CISE) *Spring 2020 – Spring 2023*
RESEARCH : Differential Privacy and Fairness.
DISSERTATION TITLE : The Interplay between Privacy and Fairness in Learning and Decision-making Problems
NEXT POSITION : Postdoc at University of Virginia

Postdocs

- > **Cuong Tran** (UNIVERSITY OF VIRGINIA, CS) *Sep 2023 – current*
RESEARCH : Data Minimization, Fairness in Large Language Models.
- > **Razan Tajeddine** (VISITOR AT UNIVERSITY OF VIRGINIA, CS) *Sep 2023 – current*
RESEARCH : Differential Privacy and Fairness.

MS Students (including Interns/Visitor)

- > **Klaus Peng** (UNIVERSITY OF VIRGINIA) *Fall 2023*
RESEARCH : Causality.

- > **Jacob Kennedy Christopher** (SYRACUSE UNIVERSITY)
 RESEARCH : Differentiable Optimization.
 NEXT POSITION : PhD student at *University of Virginia*.

Spring 2023
- > **St John Grimbly** (UNIVERSITY OF SOUTH AFRICA)
 RESEARCH : Causality and Fairness.
 NEXT POSITION : PhD student at *University of South Africa*.

Spring 2023
- > **Yehya Farhat** (SU)
 PROPOSED THESIS : Surrogate ML models for optimization.

Fall 2022
- > **Rakshit Naidu** (CMU)
 RESEARCH : Privacy and Fairness in ML.
 NEXT POSITION : PhD student at *Carnegie Mellon University*

Summer 2022
- > **Pratik Paranjape** (SYRACUSE UNIVERSITY, CISE)
 RESEARCH : Generating datasets for preference elicitation.
 First job after graduation : *Developer at OthersideAI*

Summer 2020
- > **Pavan Kumar Vaddineni** (SYRACUSE UNIVERSITY, CISE),
 RESEARCH : Explainable and Fair Learning.
 First job after graduation : *Same*

Spring 2020
- > **William Kluegel** (New Mexico State University, CS)
 RESEARCH : *Optimization and Preferences Elicitation for Smart Home Devices*.
 First job after graduation : *Sandia National Labs*

2016 – 2018

BS and High-School Students

Catherine Smolka (Deep Run High School, VA, 2023-2024), **Pranav Putta** (GaTech, Summer 2023) [REU], **Winston Tsui** (SU, Summer 2023), **Zhongquan Cheng** (SU, Summer 2023), **Adya Parida** (SU, Fall 2022) [REU], **Deniz Gursoy** (Fayetteville High School, Summer 2022), **Saswat Das** (ITS, Summer 2022), **Utsav Pathak** (Alliance University, Bengaluru, Summer 2022), **Daiwei Shen** (Northwestern, Summer 2022), **Sunisth Kumar** (Bennett University, Summer 2022), **Kyle Beiter** (SU, Summer 2021) [REU], **Shantanu Jhaveri** (USC, Summer 2021) [REU], **Dayong Gu** (SU, Summer 2021), **Guoliang Chen** (SU, Summer 2021), **Pradyumn Yadav** (SU, Summer 2021), **Anudit Nagar** (SU, Summer 2020 – Current), **Zhiyan Yao** (SU, Summer 2020 – Current), **Zifei Lu** (SU, Summer 2020), **Thomas Montfort** (SU, Summer 2020), **Cong Liu** (SU, Summer 2020), **Lyndon Shi** (UMich, 2018) **Jiayu Chen** (UMich, 2018) **Eric Frechette** (NMSU, 2016).

PhD Dissertation Committee

- > **Dung Nguyen**, (UNIVERSITY OF VIRGINIA)

2023
- > **Elena Long**, (UNIVERSITY OF VIRGINIA)

2023
- > **Khang Tran**, (NEW JERSEY INSTITUTE OF TECHNOLOGY)

2023
- > **Keyu Zhu**, (GEORGIA INSTITUTE OF TECHNOLOGY)

2023
- > **Adrià Fenoy Barcel**, (UNIVERSITY OF VERONA)

2023
- > **Jeroen Fransman**, (DELFT UNIVERSITY OF TECHNOLOGY)

2022
- > **Pegah Hozhabrierdi**, (SYRACUSE UNIVERSITY)

2022
- > **Carlos Pinzon**, (ÉCOLE POLYTECHNIQUE)

2022
- > **Baocheng Geng**, (SYRACUSE UNIVERSITY)

2021
- > **Pranay Sharma**, (SYRACUSE UNIVERSITY)

2021

TUTORIALS, SELECTED INVITED TALKS AND MEDIA INTERVIEWS

- > **Keynote Talk** : The unintended risks of Private systems
Partnership for AI

December 2023
- > **Keynote Talk** : Privacy and Fairness in Societal Systems
Workshop on the Tradeoffs in Ethical AI, INRIA, France

November 2023
- > **Invited Talk** : Responsible AI : Privacy and Fairness in Decision Making and Learning Tasks
TOC FOR FAIRNESS, Simons Collaboration on the Theory of Algorithmic Fairness.

November 2023
- > **Panelist** : Navigating the Frontiers of Artificial Intelligence
The Center for Politics, University of Virginia

October 2023
- > **Invited Talk** : Optimization and Learning for Science and Engineering
Conference on Complex Systems 2023

October 2023
- > **Invited Talk** : ML for Optimization and Optimization for ML
AI/ML Seminar Series, University of Virginia

September 2023
- > **Keynote Talk** : The Unintended Societal Effects of Privacy in Decision and Learning Tasks
IJCAI-2023, International Workshop on Mining Actionable Insights from Social Networks

August 2023
- > **Invited Talk** : End-to-end Constrained Optimization Learning
AC Summer School : Machine Learning for Constraint Programming

July 2023
- > **Invited Talk** : Differential Privacy for Power Systems
DTU PES Summer School

June 2023
- > **Invited Talk** : Optimization Proxies and Differentiable Optimization for Decision Making
MARS Seminar, Pacific Northwest National Laboratory (PNNL)

June 2023
- > **Invited Talk** : Constrained-aware Machine Learning in Energy Systems
IEEE Power and Energy Society webinar series

June 2023
- > **Invited Talk** : Responsible AI : Privacy and Fairness in Decision and Learning Tasks
UC San Diego

April 2023
- > **Panelist** : ChatGPT : Charms and Challenges
Syracuse University

April 2023
- > **Invited Talk** : Responsible AI : Privacy and Fairness in Decision and Learning Tasks
University of Virginia

March 2023
- > **Invited Talk** : Constrained-Aware Machine Learning
Washington University in St. Louis

Feb 2023
- > **Invited Talk** : Differential Privacy for Power Systems
Los Alamos National Lab's 5th Grid Science Winter School and Conference

Jan 2023
- > **Invited Panelist** : Algorithmic Fairness and its Intersections
[🔗 Thirty-sixth Conference on Neural Information Processing Systems \(NeurIPS\)](#)

Dec 2022
- > **Tutorial** : End-to-end constrained optimization learning
[🔗 21st International Conference of the Italian Association for Artificial Intelligence \(AIxIA 2022\)](#)

Dec 2022
- > **Media Cover** : How network pruning can skew deep learning models
[🔗 Science Daily](#) [🔗 TechXplore](#) [🔗 AAAS EurekAlert](#)

Nov 2022
- > **Invited Talk** : Disparate Impacts in Privacy-preserving Machine Learning
Washington University in St. Louis

Nov 2022
- > **Tutorial** : Decision Focused Learning
Dagstuhl seminar on Data-Driven Combinatorial Optimisation

Oct 2022
- > **Media Interview** : Privacy and Fairness in AI
[🔗 Syracuse Media Report](#) [🔗 NMSU News](#) [🔗 Sun News](#)

Jul/Sep 2022
- > **Media Interview** : Google Scholar Research Award
[🔗 Syracuse Media Report](#)

Jun 2022
- > **Tutorial** : Impacts of Data Privacy and Equity on Public Policy
[🔗 ACM Conference on Fairness, Accountability, and Transparency \(FAccT\)](#)

Jun 2022
- > **Invited Panelist** : Fostering the Use of AI for Power System Transformation
[🔗 Climate Change AI](#)

Jun 2022

- > **Media Interview** : NSF CAREER Award
[Syracuse Media Report](#)
Jun 2022
- > **Invited Talk** : End-to-end constrained deep learning optimization
 Hall of Science (Kantar.com)
 Mar 2022
- > **Panelist** : AAAI-22 DC - Career Panel
[36th AAAI Conference on Artificial Intelligence \(AAAI\)](#)
Feb 2022
- > **Invited Talk** : Privacy-preserving ML and decisions-making : uses and unintended disparate effects
[PriSec-ML \(virtual seminars\)](#)
Feb 2022
- > **Media Interview** : AI for Climate Change
[RaiNews](#)
Dec 2021
- > **Popular Media Report** : ISSNAF Young Investigator Award
[New York Voice](#) [AISE](#) [Il Mattino](#) [StartupItalia](#) [Zox](#) [PugliaNews](#)
Nov 2021
- > **Invited Talk** : Deep Constraint Learning : Applications and Privacy Considerations
[Italian Scientists & Scholars in North America Foundation](#)
Nov 2021
- > **Plenary Keynote Talk** : Constraint-based Differential Privacy
[The International Conference on Principle and Practice of Constraint Programming \(CP 2021\)](#) ,
 Oct 2021
- > **Popular Media Interview** : Deep Learning for Engineering Applications
[Blum News](#)
Nov 2021
- > **Invited Talk** : Privacy-Preserving Machine Learning : Uses and Unintended Disparate Effect
 ASPI Seminar (Syracuse University)
 Sep 2021
- > **Invited Talk** : Differential Privacy and Machine Learning
 SUPA ECS workshop for High School Teachers
 May 2021
- > **Invited Talk** : Deep Constraint Learning for Critical Engineering Systems
[Italian Scientists & Scholars in North America Foundation](#)
Nov 2020
- > **Tutorial** : Tutorial on Multiagent Optimization
[AAAI Conference on Artificial Intelligence \(AAAI 2020\)](#)
Feb 2020
- > **Media Cover** : Multiagent Systems
[NetworkDigital360](#)
Feb 2020
- > **Invited Talk** : Privacy-Preserving Artificial Intelligence
 University of Parma (CS Dept)
 Jun 2019
- > **Tutorial** : Tutorial on Multiagent Optimization for IoT Applications
[International Conference on Autonomous Agents and Multiagent Systems \(AAMAS 2019\)](#)
May 2019
- > **Invited Talk** : Differential Privacy for AI Applications
 University of Southern California - Information Sciences Institute
 Michigan State University
 Jan 2019
Feb 2019
- > **Invited Talk** : Privacy Preserving Artificial Intelligence
 Syracuse University Feb 2019
 Drexel University Feb 2019
 University of Arkansas Feb 2019
 Colorado State University Mar 2019
 University of Connecticut Mar 2019
- > **Tutorial** : Tutorial on Constrained Multi-agent Optimization
[AAAI Conference on Artificial Intelligence \(AAAI 2018\)](#)
Feb 2018
- > **Plenary Keynote Talk** : Distributed Constraint Optimization for Smart Energy Networks
 Italian Conference on Artificial Intelligence (AI*IA 2017)
 Nov 2017
- > **Invited Talk** : Distributed Constraint Optimization
 Delft University (TU Delft) Apr 2016
 University of Udine Apr 2016
 New Mexico State University Mar 2016
- > **Invited Talk** : Large Neighboring Search for Distributed Constrained Optimization
 Ben-Gurion University of the Negev
 Mar 2016

RESEARCH GRANTS AND GIFTS

Summary : **Total External :** \$2,487,403 (\$1,527,403 as PI) **Total Internal :** \$21,000

NATIONAL SCIENCE FOUNDATION (CISE - RI) \$350,000 of \$600,000 AUG. 2023–JUN. 2026

Collaborative Research : RI : Small : End-to-end Learning of Fair and Explainable Schedules for Court Systems [↗](#)

PI : Ferdinando Fioretto (lead), **co-PI** : Lauryn Gouldin

NATIONAL SCIENCE FOUNDATION (EECS - EPCN) \$260,000 of \$520,000 AUG. 2023–JUN. 2026

Collaborative Research : Physics Informed Real-time Optimal Power Flow [↗](#)

PI : Ferdinando Fioretto

AMAZON RESEARCH AWARDS AWS AI \$55,000 JAN. 2023–

Toward Understanding the Unintended Disparate Impacts of Private Machine Learning Systems [↗](#)

PI : Ferdinando Fioretto

NATIONAL SCIENCE FOUNDATION (CAREER, CISE - RI) \$515,403 MAR. 2022–FEB. 2027

CAREER : End-to-end Constrained Optimization Learning [↗](#)

PI : Ferdinando Fioretto

GOOGLE RESEARCH SCHOLAR AWARD \$60,000 JUL. 2022–

On the Equity of Differentially Private Decision Processes [↗](#)

PI : Ferdinando Fioretto

NATIONAL SCIENCE FOUNDATION (CISE - SATC) \$281,000 of \$500,000 OCT. 2021–SEP. 2024

Collaborative Research : SaTC : Core : Small : Privacy and Fairness in Critical Decision Making [↗](#)

PI : Ferdinando Fioretto (lead)

NATIONAL SCIENCE FOUNDATION (CISE - RI) \$266,000 of \$500,000 OCT. 2020–SEP. 2023

Collaborative Research : RI : Small : Deep Constrained Learning for Power Systems [↗](#)

PI : Ferdinando Fioretto

CUSE PROGRAM \$21,000 of \$21,000 JUN. 2021–MAY 2023

On the Potential Perils of Fairness Algorithms in Decision Making and Learning Tasks [↗](#)

PI : Ferdinando Fioretto, **co-PI** : Sucheta Soundarajan

TRAVEL AND SERVICE GRANTS

ARTIFICIAL INTELLIGENCE JOURNAL \$15,000 JAN. 2023–

Student Support for AAMAS 2023 [↗](#)

PI : Ana L. C. Bazzan and Ferdinando Fioretto

NATIONAL SCIENCE FOUNDATION \$25,000 MAY. 2023–

Travel : Travel : Doctoral Mentoring Consortium at the 22nd International Conference on Autonomous Agents and Multiagent Systems [↗](#)

PI : Ferdinando Fioretto

GOOGLE \$2,500 FEB. 2022–

Support for Scholarship awards to attend the 2023 AAAI Privacy Preserving AI workshop [↗](#)

PI : Ferdinando Fioretto

SERVICE

CONFERENCE CHAIR

- **International Conference on Principles and Practice of Constraint Programming (CP)** 2022
with Roie Zivan

WORKSHOP CHAIR

- **AAAI Workshop on Learnable Optimization (LEARNOPT)**, at AAAI 2024
with Elias B. Khalil, Pascal Van Hentenryck, Jan Drgona, Draguna Vrabie, and Priya Donti
- **Fifth AAAI Workshop on Privacy Preserving Artificial Intelligence (PPAI)**, at AAAI 2024
with Juba Ziani, Christine Task, and Niloofar Mireshghallah
- **Algorithmic Fairness through the lens of Time (AFT)**, at NeurIPS 2023
with Awa Dieng, Miriam Rateike, and Golnoosh Farnadi
- **Workshop on Optimization and Learning in Multi-Agent Systems**, at AAMAS 2023
with Hau Chan, Jiaoyang Li, Filippo Bistaffa, and James Kotary
- **Fourth AAAI Workshop on Privacy Preserving Artificial Intelligence (PPAI)**, at AAAI 2023
with Catuscia Palamidessi, and Pascal Van Hentenryck
- **Algorithmic Fairness through the lens of Causality and Privacy (AFCP)**, at NeurIPS 2022
with Awa Dieng, Miriam Rateike, and Golnoosh Farnadi
- **Workshop on Optimization and Learning in Multi-Agent Systems**, at AAMAS 2022
with Hau Chan and Jiaoyang Li
- **Third AAAI Workshop on Privacy Preserving Artificial Intelligence (PPAI)**, at AAAI 2022
with Aleksandra Korolova and Pascal Van Hentenryck
- **AAAI Workshop on Machine Learning for Operational Research (ML4OR)**, at AAAI 2022
with Emma Frejinger, Elias Khalil, and Pashootan Vaezipoor
- **Second AAAI Workshop on Privacy Preserving Artificial Intelligence (PPAI)**, at AAAI 2021
with Pascal Van Hentenryck and Richard W. Evans
- **Workshop on Optimization and Learning in Multi-Agent Systems (OptLearnMAS)**, at AAMAS 2021
with Amulya Yadev, Gauthier Picard, and Bryan Wilder
- **First AAAI Workshop on Privacy Preserving Artificial Intelligence (PPAI)**, at AAAI 2020
with Pascal Van Hentenryck and Rachel Cummings
- **Workshop on Optimization and Learning in Multi-Agent Systems (OptLearnMAS)**, at AAMAS 2020
with Bryan Wilder and Long Tran-Thanh
- **Workshop on Optimization in Multi-Agent Systems (OptMAS)**, at AAMAS 2019
with Archie Chapman and Long Tran-Thanh
- **Workshop on Optimization in Multi-Agent Systems (OptMAS)**, at FAIM18 2018
with Archie Chapman, Long Tran-Thanh, and Roie Zivan

CONFERENCE ORGANIZING COMMITTEE

- **Demo Track Chair** : International Joint Conference on Artificial Intelligence (IJCAI) 2023
- **Scholarship Chair** : International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2023
- **Tutorial Chair** : International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2022
- **Track Chair** : International Conference on Principles and Practice of Constraint Programming (CP) 2018 – 2019
- **Publicity Chair** : International Conference on Logic Programming (ICLP) 2019
- **Track Chair** : International Symposium on Mathematical Programming (ISMP) 2018

SERVICE TO JOURNALS

- **Associate Editor** : IJSE Transactions *Special issue on Federated Learning* 2023
- **Guest Editor** : Theory and Practice of Logic Programming (TPLP) *Past and Present (and Future) of Parallel and Distributed Computation in (Constraint) Logic Programming* 2018

AREA CHAIR

- › International Joint Conference on Artificial Intelligence (IJCAI) 2024
- › ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2023, 2024
- › European Conference on Artificial Intelligence (ECAI) 2023

SENIOR PROGRAM COMMITTEE

- › AAAI Conference on Artificial Intelligence (AAAI) 2020 – 2024
- › International Joint Conference on Artificial Intelligence (IJCAI) 2021 – 2023
- › International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2023
- › International Conference on Principles and Practice of Constraint Programming (CP) 2018, 2019, 2022

PROGRAM COMMITTEE

- › Neural Information Processing Systems (NeurIPS) 2020 – 2023
- › International Conference on Machine Learning (ICML) 2021 – 2023
- › International Conference on Learning Representations (ICLR) 2021 – 2024
- › Privacy Enhancing Technologies Symposium (PETS) 2021 – 2023
- › Electric Power System Research (PSCC) 2022
- › International Conference on Logic Programming (ICLP) 2021
- › International Conference on Principles and Practice of Constraint Programming (CP) 2016 – 2018, 2021
- › International Joint Conference on Artificial Intelligence (IJCAI) 2016 – 2020
- › European Conference on Machine Learning (ECML) 2020
- › International Symposium on Combinatorial Search (SoCS) 2015 – 2020
- › International Workshop on Optimization and Learning in Multi-Agent Systems (OptLearnMAS) 2020
- › AAAI Conference on Artificial Intelligence (AAAI) 2018 – 2019
- › Italian Conference on Computational Logic (CILC) 2017 – 2019
- › Distributed Artificial Intelligence (DAI) 2019
- › European Conference on Artificial Intelligence (ECAI) 2016 – 2018
- › International Workshop on Optimization in Multi-Agent Systems (OptMAS) 2016 – 2017
- › Italian Conference on Artificial Intelligence (AI*IA) 2017

JOURNAL REVIEWER

- › INFORMS Journal on Computing 2022, 2023
- › Transactions on Machine Learning Research (TMLR) 2022
- › Journal of Artificial Intelligence Research (JAIR) 2016 – 2022
- › Artificial Intelligence Journal (AIJ) 2016 – 2021
- › Journal of Machine Learning Research (JMLR) 2021
- › IEEE Transactions on Smart Grid 2019 – 2021
- › IEEE Transactions on Power Systems 2020 – 2021
- › IEEE Transactions on Dependable and Secure Computing 2020
- › IEEE Transactions on Information Forensics & Security 2019 – 2020
- › Gates Open Research 2020
- › Patterns 2020
- › Autonomous Agents and Multi-Agent Systems (JAAMAS) 2014 – 2017, 2019 – 2020, 2023
- › Artificial Intelligence Review (AIR) 2016 – 2017
- › Fundamenta Informaticae Journal 2016 – 2017
- › AI Communications 2017
- › Algorithms for Molecular Biology (AMB) 2014

DOCTORAL CONSORTIA MENTORING

- › AAAI Conference on Artificial Intelligence (AAAI) 2022

CONFERENCE/SYMPOSIUM/WORKSHOP REVIEWER

› European Control Conference (ECC)	2021
› AAAI Conference on Artificial Intelligence (AAAI)	2014 – 2017
› International Conference on Autonomous Agents and Multiagent Systems (AAMAS)	2014 – 2016
› International Conference on Principles and Practice of Constraint Programming (CP)	2016 – 2017
› International Conference on Principles and Practice of Multi-Agent Systems (PRIMA)	2016
› International Joint Conference on Artificial Intelligence (IJCAI)	2015
› International Conference on Logic Programming (ICLP)	2015
› International Symposium on Combinatorial Search (SoCS)	2014
› International Workshop on Distributed Constraint Reasoning (DCR)	2014
› EURO-Par Parallel Processing (EUROPAR)	2014
› Principles and Practice of Declarative Programming (PPDP)	2014

PANEL REVIEWER

› Austrian Research Promotion Agency (FFG)	2023
› NSF, Eng Panel	2023
› NSF, NRT Panel	2022
› NSF, CISE SaTC Panel	2022
› NSF, CISE RI Panel	2022
› Israel Science Foundation (IIS) (external reviewer)	2022 – 2023
› Climate Change AI (CCAI) Grant	2022 – 2023
› CUSE Grant, Syracuse University	2020 – 2021
› NSF, CISE RI (external reviewer)	2020

SCHOOL/DEPARTMENT SERVICE (AT UVA)

› Graduate Program Committee	2023 – 2024
› Advisor ACM SIGAI at UVA	2023 – 2024

SCHOOL/DEPARTMENT SERVICE (AT SU)

› Curriculum Committee	2023 – 2024
› Prepare and Grade Qualifier exam (Programming/Data Structure)	2022 – 2023
› Academic Integrity panelist	2021 – 2022
› Remembrance Scholars Selection Committee	2022