Ferdinando **Fioretto**

Assistant Professor

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

Professional Experience

Current Aug. 2023	**University of Virginia**, *Computer Science*, Charlottesville, VA Assistant Professor
Jul. 2023 Jan. 2020	**Syracuse University**, *Electrical Engineering & Computer Science*, Syracuse, NY Assistant Professor
Dec. 2019 Sep. 2018	**Georgia Institute of Technology**, *School of Industrial and System Engineering*, Atlanta, GA Post-doctoral Researcher
Dec. 2018 Sep. 2016	**University of Michigan**, *Industrial and Operations Engineering*, Ann Arbor, MI Research Fellow

Education

Aug. 2016	**University of Udine** [1], *Computer Science*, Udine, IT Ph.D. in Computer Science (with MS in 2012)
Nov. 2009	**University of Parma**, *Computer Science & Mathematics*, Parma, IT BS. in Computer Science

Selected Honors and Awards

2022 **Google Research Scholar Award**, Google (Privacy). Link
- 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 **Amazon Research Award**, Amazon – AWS AI (Responsible AI). 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 **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 **NSF CAREER Award**, National Science Foundation. Press
- Project name : "**End-to-end Constrained Optimization Learning**".
  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 mis-

1. Dual degree with New Mexico State University

sion 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 **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.

2022 **Early Career Spotlight**, International Joint Conference on Artificial Intelligence (IJCAI). Link
› Accompanying paper : "Integrating Machine Learning and Optimization to Boost Decision Making".
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.

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
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 ($1500)**, NMSU.
2012 **Honors Graduate Recognition for Outstanding Academic Success**, NMSU.
2008 **Erasmus Scholarship ($\sim \$14,000$)**, University of Leeds.

Publications

Summary : › *14* Journals articles › *69* Conference papers › *2* Book chapters › *3* Editorial articles › *23* Workshop papers › *20+* Preprints

Total citations : 2276 **H-index** : 25 Google Scholar

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

Pre-prints and In-press

9. Joonhyuk Ko, Juba Ziani, Saswat Das, Matt Williams, **Ferdinando Fioretto**. *"Fairness Issues and Mitigations in (Differentially Private) Socio-demographic Data Processes"*. **CoRR abs**/2408.08471.
8. Jacob K Christopher, Brian R Bartoldson, Bhavya Kailkhura, **Ferdinando Fioretto**. *"Speculative Diffusion Decoding : Accelerating Language Generation through Diffusion"*. **CoRR abs**/2408.05636.
7. **Ferdinando Fioretto**, Diptangshu Sen, Juba Ziani. *"Differentially Private Data Release on Graphs : Inefficiencies and Unfairness"*. (under review) **CoRR abs**/2408.05246.
6. Saswat Das, Marco Romanelli, Cuong Tran, Zarreen Reza, Bhavya Kailkhura, **Ferdinando Fioretto**. *"Low-rank finetuning for LLMs : A fairness perspective"*. (under review) **CoRR abs**/2405.18572, 2024.
5. Prakhar Ganesh, Cuong Tran, Reza Shokri, **Ferdinando Fioretto**. *"The Data Minimization Principle in Machine Learning"*. (under review) **CoRR abs**/2405.19471, 2024.
4. James Kotary, **Ferdinando Fioretto**. *"Learning Constrained Optimization with Deep Augmented Lagrangian Methods"*. **CoRR abs**/2403.03454, 2024.
3. Jacob K Christopher, **Ferdinando Fioretto**. *"Projected Generative Diffusion Models for Constraint Satisfaction"*. (under review) **CoRR abs**/2402.03559, 2024.
2. James Kotary, Jacob Christopher, My H Dinh, and **Ferdinando Fioretto**. *"Analyzing and Enhancing the Backward-Pass Convergence of Unrolled Optimization"*. (under review in INFORMS journal of computing) **CoRR abs**/2301.12047, 2024.
1. Khang Tran, **Ferdinando Fioretto**, Issa Khalil, My T. Thai, NhatHai Phan. *"FairDP : Certified Fairness with Differential Privacy"*. **CoRR abs**/2305.16474, 2023.

Journals

14. 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"*. **Journal of Artificial Intelligence Research (JAIR)**, accepted, 2024.
13. Mostafa Mohammadian, Kyri Baker, **Ferdinando Fioretto**. *"Gradient-Enhanced Physics-Informed Neural Networks for Power Systems Operational Support"*. Electric Power Systems Research (223), pages 109551, 2023.
12. 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.
11. **Ferdinando Fioretto**, Pascal Van Hentenryck, Keyu Zhu. *"Differential Privacy of Hierarchical Census Data : An Optimization Approach"*. **Artificial Intelligence Journal (AIJ)**, (296), pages 103475, 2021.
10 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).

9. **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.
8 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).

7 **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 .

6 **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).

5. **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.
4. **Ferdinando Fioretto**, William Yeoh. *"AI Buzzwords Explained : Distributed Constraint Optimization Problems"*. **AI Matters**, 3 (4), pages 8–13, 2018.
3. **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.
2. **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.
1. $(\alpha\text{-}\beta)$[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.

Rigorously Peer Reviewed Conferences

2024

69. Ethan King, James Kotary, **Ferdinando Fioretto**, Jan Drgona. *"Metric Learning to Accelerate Convergence of Operator Splitting Methods for Differentiable Parametric Programming"*. **63rd IEEE Conference on Decision and Control (CDC)**, 2024.
Acceptance Rate : TBA.

68. James Kotary, Vincenzo Di Vito, Jacob Christopher, Pascal Van Hentenryck, Ferdinando Fioretto. *"Predict-Then-Optimize by Proxy : Learning Joint Models of Prediction and Optimization"*. *Proceedings of the* **European Conference of Artificial Intelligence (ECAI)**, 2024.
Acceptance Rate : 23%.

67. My H. Dinh, James Kotary, **Ferdinando Fioretto**. *"Differentiable Approximations of Fair OWA Optimization"*. **Workshop on Differentiable Almost Everything – at ICML**, 2024.
Acceptance Rate : TBA.

66. **Ferdinando Fioretto**. *"The Data Minimization Principle in Machine Learning"*. **Workshop on Generative AI and Law – at ICML**, 2024.
Acceptance Rate : 30%.

65. Sree Harsha Nelaturu, Nishaanth Kanna Ravichandran, Cuong Tran, Sara Hooker, and **Ferdinando Fioretto**. *"On The Fairness Impacts of Hardware Selection in Machine Learning"*. *Proceedings of the* **International Conference on Machine Learning (ICML)**, 2024.
Acceptance Rate : 27.5%.

64. Saswat Das, Marco Romanelli, **Ferdinando Fioretto**. *"Disparate Impact on Group Accuracy of Linearization for Private Inference"*. *Proceedings of the* **International Conference on Machine Learning (ICML)**, 2024.
Acceptance Rate : 27.5%.

63. My H. Dinh, James Kotary, **Ferdinando Fioretto**. *"End-to-End Learning for Fair Multiobjective Optimization Under Uncertainty"*. *Proceedings of the* **Conference of Uncertainty on Artificial Intelligence (UAI)**, 2024.
Acceptance Rate : 27.0%.

62. Cuong Tran, Keyu Zhu, Pascal Van Hentenryck, **Ferdinando Fioretto**. *"Fairness Increases Adversarial Vulnerability"*. *Proceedings of the* **International Joint Conference on Artificial Intelligence (IJCAI)**, 2024.
Acceptance Rate : 13.9%.

61. My H. Dinh, James Kotary, **Ferdinando Fioretto**. *"Learning Fair Ranking Policies via Differentiable Optimization of Ordered Weighted Averages"*. *Proceedings of the* **ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT)**, 2024.
Acceptance Rate : 24.3%.

60. **Ferdinando Fioretto**, Keyu Zhu, Pascal Van Hentenryck, Saswat Das and Christine Task. *"Finding ϵ and δ of Traditional Disclosure Control Systems"*. *Proceedings of the* **AAAI Conference on Artificial Intelligence (AAAI)**, 2024.
Acceptance Rate : 23.75%.

2. Author list is order alphabetically.

2023

60. Cuong Tran and **Ferdinando Fioretto**. *"Data Minimization at Inference Time"*. *Proceedings of the* **Conference on Neural Information Processing Systems (NeurIPS)**, 2023.
Acceptance Rate : 23%.

59. Vladimir Dvorkin and **Ferdinando Fioretto**. *"Price-Aware Deep Learning for Electricity Markets"*. **Tackling Climate Change with Machine Learning, at NeurIPS** 2023.
Acceptance Rate : 35%.

58. 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.
Acceptance Rate : unknown.

57. 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.
Acceptance Rate : 15%.

56. 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.
Acceptance Rate : 15%.

55. James Kotary, Vincenzo Di Vito, **Ferdinando Fioretto**. *"End-to-End Combinatorial Ensemble Learning"*. *Proceedings of the* **International Joint Conference on Artificial Intelligence (IJCAI)**, 2023.
Acceptance Rate : 15%.

54. Cuong Tran, **Ferdinando Fioretto**. *"On the Fairness Impacts of Private Ensembles Models"*. *Proceedings of the* **International Joint Conference on Artificial Intelligence (IJCAI)**, 2023.
Acceptance Rate : 15%.

53. Terrence W.K. Mak, **Ferdinando Fioretto**, Pascal Van Hentenryck. *"Load Encoding for Learning AC-OPF"*. Proceedings of the **IEEE PES General Meeting (PES)**, 2023.
Acceptance Rate : N/A.

52. 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.
Acceptance Rate : 40%.

2022

51. 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.
Acceptance Rate : 25.6%.
Lightning Talk (Spotlight) (Typically assigned to ∼3% out of all paper submissions (10,411, in 2022)).

50. 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.
Acceptance Rate : 15%.

49. **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.
Acceptance Rate : 18% (survey track).

48. **Ferdinando Fioretto**. *"Integrating Machine Learning and Optimization to Boost Decision Making"*. *Proceedings of the* **International Joint Conference on Artificial Intelligence (IJCAI)**, 2022.
Acceptance Rate : Invited.
Early Career Spotlight (Accompanying paper).

47. 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.
Acceptance Rate : 17%.

46. 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.
Acceptance Rate : 15%.

45. 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.
Acceptance Rate : N/A.

44. 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.
Acceptance Rate :
.

2021

43. 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.
Acceptance Rate : 26%.

42. 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.
Acceptance Rate : 26%.

41. 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.
Acceptance Rate : 13.9%.

🏆 2022 Caspar Bowden PET Award (Selected among all papers about Privacy Enhancing Technologies published in international conferences between 2020–2022.).

40. 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.
Acceptance Rate : 30.1%.

39. 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.
Acceptance Rate : 21.0%.

38. 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.
Acceptance Rate : 21.0%.

37. 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.
Acceptance Rate : 40%.

36. **Ferdinando Fioretto. "Constrained-based Differential Privacy". Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP), 1868–8969, 2021.**
Acceptance Rate : Invited.

35. Vladimir Dvorkin, **Ferdinando Fioretto**, Pascal Van Hentenryck, Jalal Kazempour, Pierre Pinson. *"Differentially Private Optimal Power Flow for Distribution Grids"*. **IEEE PowerTech**, 2021.
Acceptance Rate : N/A.

2020

34. **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.
Acceptance Rate : 19%.

33. **Ferdinando Fioretto**, Lesia Mitridati, Pascal Van Hentenryck. *"Differential Privacy Stackebelg Games"*. *Proceedings of the* **International Joint Conference on Artificial Intelligence (IJCAI)**, 3480–3486, 2020.
Acceptance Rate : 12.6%.

32. **Ferdinando Fioretto**, Pascal Van Hentenryck. *"OptStream : Releasing Time Series Privately"*. *Proceedings of the* **International Joint Conference on Artificial Intelligence (IJCAI)**, 5135–5139, 2020.
Acceptance Rate : invited.
Invited to the IJCAI journal track .

31. 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.
Acceptance Rate : ∼30%.

30. **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.
Acceptance Rate : 20.6%.

29. 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.
Acceptance Rate : 38.0%.

2019

28. **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.
Acceptance Rate : 24%.

27. **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.
Acceptance Rate : 17.9%.

26. **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.
Acceptance Rate : 37%.
Invited to Constraint journal (selected papers – declined).

2018

25. **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.
Acceptance Rate : 26%.

24. **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.
Acceptance Rate : 25%.

23. 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.
Acceptance Rate : 33%.

22. **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.
Acceptance Rate : 48%.

21. **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.
Acceptance Rate : N/A.

2017

20. **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.
Acceptance Rate : 25%.

19. **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.
Acceptance Rate : 25%.

18. 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.
Acceptance Rate : 25%.

17. 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.
Acceptance Rate : 43%.

2016

16. 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.
Acceptance Rate : 25%.

15. 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.
Acceptance Rate : 25%.

14. **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.
Acceptance Rate : 26%.

13. **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.
Acceptance Rate : 35%.

2015

12. **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.
Acceptance Rate : 49%.

11. **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.

Acceptance Rate : 46%.

10. **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.
Acceptance Rate : 46%.

9. **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.
Acceptance Rate : N/A.

8. **Ferdinando Fioretto**. *"Exploiting the Structure of Distributed Constraint Optimization Problems"*. *Proceedings of the* AAAI Conference on Artificial Intelligence (AAAI), pages 4233–4234, 2015.
Acceptance Rate : N/A.

≤2014

7. (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.
Acceptance Rate : 28%.

6. **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.
Acceptance Rate : 50%.

5. (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.
Acceptance Rate : 55%.

4. **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.
Acceptance Rate : 46%.

3. **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.
Acceptance Rate : 55%.
Best Student Paper Award .

2. (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.
Acceptance Rate : 36%.

1. 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).
Acceptance Rate : N/A.

Book Chapters and Editorial Articles

5. **Ferdinando Fioretto**, et al.. *"Reports of the Workshops Held at the 2022 AAAI Conference on Artificial Intelligence"*. AI Magazine, 2022.
4. **Ferdinando Fioretto**, et al.. *"Reports of the Workshops Held at the 2021 AAAI Conference on Artificial Intelligence"*. AI Magazine, 2021.
3. **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.

2 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 (LCNS)*, LNCS, volume 10643 pages 125–142, Springer, 2017.

Visionary Paper Award (AAMAS workshop series).

1. 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.

Rigorously Peer Reviewed Workshops

23. My H. Dinh, James Kotary, **Ferdinando Fioretto**. *"Differentiable Approximations of Fair OWA Optimization"*. **Workshop on Differentiable Almost Everything – at ICML**, 2024.
22. **Ferdinando Fioretto**. *"The Data Minimization Principle in Machine Learning"*. **Workshop on Generative AI and Law – at ICML**, 2024.
21. Vladimir Dvorkin, **Ferdinando Fioretto**, Pascal Van Hentenryck, Pierre Pinson, Jalal Kazempour. *"Privacy-Preserving Convex Optimization : When Differential Privacy Meets Stochastic Programming"*. **Workshop on Climate Change AI – at NeurIPS**, 2023.
20. 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.

19. Cuong Tran, **Ferdinando Fioretto**. *"Decision Making with Differential Privacy under the Fairness Lens"*. **Theory and Practice of Differential Privacy (TPDP) – at ICML**, 2021.
18. 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.
17. 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.
16. **Ferdinando Fioretto**, Cuong Tran, Pascal Van Hentenryck. *"Lagrangian Duality for Constrained Deep Learning"*. **INFORMS**, 2020.
15. Lesia Mitridati, **Ferdinando Fioretto**, Pascal Van Hentenryck. *"Differential Privacy For Stackelberg Games : An Application To Gas And Electricity Markets"*. **INFORMS**, 2020.
14. 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.
13. **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.
12. 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.
11. **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 AAAI**, 2017.
10. 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.
9. 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.
8. 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 AAAI**, 2016.
7. **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.
6. **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.

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"*. **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.

Archived and Extended Versions of Published Papers

12. My H. Dinh, **Ferdinando Fioretto**. *"Context-Aware Differential Privacy for Language Modeling"*. **CoRR abs**/2301.12288, 2023.
11. Sawinder Kaur, **Ferdinando Fioretto**, Asif Salekin. *"Deadwooding : Robust Global Pruning for Deep Neural Networks"*. **CoRR abs**/2202.05226, 2022.
10. My H. Dinh, **Ferdinando Fioretto**, Mostafa Mohammadian, Kyri Baker. *"Towards Understanding the Unreasonable Effectiveness of Learning AC-OPF Solutions"*. **CoRR abs**/2111.11168, 2021.
9. Cuong Tran, My H. Dinh, **Ferdinando Fioretto**. *"Differentially Private Deep Learning under the Fairness Lens"*. **CoRR abs**/2106.02674, 2021 (**extended NeurIPS-21 version**).
8. Anudit Nagar, Cuong Tran, **Ferdinando Fioretto**. *"A Privacy-Preserving and Trustable Multi-agent Learning Framework"*. **CoRR abs**/2106.01242, 2021. (**extended AAMAS-21 version**).
7. 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**).
6. Terrence W.K. Mak, **Ferdinando Fioretto**, Pascal VanHentenryck. *"Load Embeddings for Scalable AC-OPF Learning"*. **CoRR abs**/2101.03973, 2021.
5. 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**).
4. 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.
3. Vladimir Dvorkin, **Ferdinando Fioretto**, Pascal Van Hentenryck, Jalal Kazempour, Pierre Pinson. *"Differentially Private Convex Optimization with Feasibility Guarantees"*. **CoRR abs**/2006.12338, 2020.
2. **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**).
1. **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**).

Teaching

Responsible AI (CS 7000), *University of Virginia*

Spring 2024 | Course Evaluation : 4.8(class), 4.82(instructor)/5.00

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

Fall 2023 | Course Evaluation : 4.33(class), 4.5(instructor)/5.00

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

Current PhD Students

- **James Kotary** (UVA, CS) *Fall 2020 – current*
  Research : Integration of Deep Learning and Optimization.
- **Vincenzo Di Vito** (UVA CS) *Fall 2022 – current*
  Research : Physics Informed Machine Learning.
- **My Dinh** (UVA CS) *Spring 2021 – current*
  Research : Deep Learning, Optimization, Fairness.
- **Saswat Das** (UVA CS) *Fall 2023 – current*
  Research : Responsible AI, Differential Privacy.
- **Jacob K. Christopher** (UVA CS) *Fall 2023 – current*
  Research : Responsible AI in Generative Models.
- **Jinhao Liang** (UVA CS) *(upcoming) Fall 2024*
  Research : Differentiable Optimization.
- **Michael Cardei** (UVA CS) *(upcoming) Fall 2024*
  Research : Responsible Generative AI.
- **Joseph Moretto** (UVA CS) *(upcoming) Fall 2024*
  co-advised with David Evans
  Research : Responsible Generative AI.

Current MS and BS Students

- **Eric Nguyen** (BS, UVA CS) *Fall 2023 – current*
- **Joonhyuk Ko** (BS, UVA CS) *Fall 2023 – current*

Past (Graduated) Students

- **Cuong Tran** (PhD, 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
- **Klaus Peng** (MS, University of Virginia) *Fall 2023*
  Research : Causality.
- **Jacob Kennedy Christopher** (MS, Syracuse University) *Spring 2023*
  Research : Differentiable Optimiztion.
  Next position : PhD student at *University of Virginia*.
- **Yehya Farhat** (MS, Syracuse University) *Fall 2022*
  Dissertation Title : Surrogate ML models for optimization.
  Next position : PhD student at *Rice University*.

Other Advised Students and Visitors

- **Cuong Tran** (Postdoc) *Sep 2023 – Mar 2024*
  Research : Data Minimization, Fairness in Large Language Models.
- **Razan Tajeddine**, PhD at U of Helsinki (Visiting postdoc) *Sep 2023 – Mar 2024*
  Research : Differential Privacy and Fairness.
- **St John Grimbly**, MS at UniSA (Visiting Student Researcher) *Spring 2023*
  Next position : PhD student at *University of South Africa*.

- **Jayanta Mandi**, PhD at KU Leuven (Visiting Student Researcher) *Jun 2022 – Sep 2022*
  Research : Decision Focused Learning.
- **Rakshit Naidu**, MS at CMU (Intern) *Summer 2022*
  Research : Privacy and Fairness in ML. Next position : PhD student at *Georgia Tech*
- **Pratik Paranjape**, BS at SU (Intern) *Summer 2020*
  Research : Generating datasets for preference elicitation. Next position : *Developer at OthersideAI*
- **Pavan Kumar Vaddineni**, BS at SU (Intern), *Spring 2020*
  Research : Explainable and Fair Learning. Next position : *Same*
- **William Kluegel**, BS NMSU (Intern) *2016 – 2018*
  Research : *Optimization and Preferences Elicitation for Smart Home Devices.* Next position : *Sandia National Labs*

BS and High-School Students

Shujun Xia (City University of Hong Kong, Summer 2024), **Zarreen Reza** (OpenMined) 2024, **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

- **Guangtao Zheng**, (University of Virginia) 2024
- **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

- **Invited speaker** : 2024 Federal Committee on Statistical Methodology (FCSM) Research and Policy Conference Oct 2024
- **Invited talk** : Oklahoma State University, School of Industrial Engineering and Management Oct 2024
- **Podcast invited speaker** : NSI Cyber and Tech Center : "Unleashing Innovation : Navigating Game Changing Technologies" – episode on open source large language model. Jul 2024
  National Security Institute at George Mason University's Antonin Scalia Law School
- **Invited participant and group lead** : US-UK Scientific Forum on Science in the Age of AI Jun 2024
  National Academy of Sciences .
- **Panelist** : AI and OR summer school May 2024
  AI-SCORE .
- **Invited talk** : Fairness in ML : The curious case of computational shortcuts and hardware choices. May, 2024
  BuzzRobot .
- **Invited talk** : The Principle of Data Minimization in Machine Learning. Apr, 2024
  Google Research Seminars.
- **Media cover** : Building fairness into AI is crucial – and hard to get right. Mar 2023
  The Conversation , CHED/QR Radio

- **Invited talk** : Responsible AI in Decision Making Processes. — Feb 2024
  Amazon Research Seminars.
- **Keynote talk** : Privacy and Fairness in Societal Systems. — Nov 2023
  Workshop on the Tradeoffs in Ethical AI, INRIA, France
- **Invited talk** : Responsible AI : Privacy and Fairness in Decision Making and Learning Tasks. — Nov 2023
  TOC FOR FAIRNESS, Simons Collaboration on the Theory of Algorithmic Fairness.
- **Panelist** : Navigating the Frontiers of Artificial Intelligence — Oct 2023
  The Center for Politics, University of Virginia
- **Invited talk** : Optimization and Learning for Science and Engineering — Oct 2023
  Conference on Complex Systems 2023
- **Invited talk** : ML for Optimization and Optimization for ML — Sep 2023
  AI/ML Seminar Series, University of Virginia
- **Keynote talk** : The Unintended Societal Effects of Privacy in Decision and Learning Tasks — Aug 2023
  IJCAI-2023, International Workshop on Mining Actionable Insights from Social Networks
- **Invited talk** : End-to-end Constrained Optimization Learning — Jul 2023
  AC Summer School : Machine Learning for Constraint Programming
- **Invited talk** : Differential Privacy for Power Systems — Jun 2023
  DTU PES Summer School
- **Invited talk** : Optimization Proxies and Differentiable Optimization for Decision Making — Jun 2023
  MARS Seminar, Pacific Northwest National Laboratory (PNNL)
- **Invited talk** : Constrained-aware Machine Learning in Energy Systems — Jun 2023
  IEEE Power and Energy Society webinar series
- **Invited talk** : Responsible AI : Privacy and Fairness in Decision and Learning Tasks — Apr 2023
  UC San Diego
- **Panelist** : ChatGPT : Charms and Challenges — Apr 2023
  Syracuse University
- **Invited talk** : Responsible AI : Privacy and Fairness in Decision and Learning Tasks — Mar 2023
  University of Virginia
- **Invited talk** : Constrained-Aware Machine Learning — Feb 2023
  Washington University in St. Louis
- **Invited talk** : Differential Privacy for Power Systems — Jan 2023
  Los Alamos National Lab's 5th Grid Science Winter School and Conference
- **Panelist** : Algorithmic Fairness and its Intersections — Dec 2022
  Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS)
- **Tutorial** : End-to-end constrained optimization learning — Dec 2022
  21st International Conference of the Italian Association for Artificial Intelligence (AIxIA 2022)
- **Media cover** : How network pruning can skew deep learning models — Nov 2022
  Science Daily TechXplore AAAS EurekAlert
- **Invited talk** : Disparate Impacts in Privacy-preserving Machine Learning — Nov 2022
  Washington University in St. Louis
- **Tutorial** : Decision Focused Learning — Oct 2022
  Dagstuhl seminar on Data-Driven Combinatorial Optimisation
- **Media interview** *: Privacy and Fairness in AI* — *Jul/Sep 2022*
  Syracuse Media Report *NMSU News* *Sun News*
- **Media interview** *: Google Scholar Research Award* — *Jun 2022*
  Syracuse Media Report
- **Tutorial** *: Impacts of Data Privacy and Equity on Public Policy* — *Jun 2022*
  ACM Conference on Fairness, Accountability, and Transparency (FAccT)
- **Panelist** *: Fostering the Use of AI for Power System Transformation* — *Jun 2022*
  Climate Change AI
- **Media interview** *: NSF CAREER Award* — *Jun 2022*
  Syracuse Media Report

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

Research Grants and Gifts

Summary : Total External : $2,848,003 Total Internal : $81,000

University of Virginia (Research Innovation Award) $60,000 Aug. 2024–Jun. 2024
Understanding and Mitigating Privacy Leakage Risks for Large Language Model Applications
PI : Ferdinando Fioretto and David Evans

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. 2025
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. 2024
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

National Science Foundation $50,000 May. 2024–
Conference : Artificial Intelligence Summer School for Computer Science and Operations Research Education
PI : Lavanya Marla and Ferdinando Fioretto

Artificial Intelligence Journal $4,000 Mar. 2024–
Student Support AU-SCORE 2024
PI : Ferdinando Fioretto and Lavanya Marla

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 $5,000 Feb. 2023–
Support for Scholarship awards to attend the 2023 AAAI Privacy Preserving AI workshop
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

- Algorithmic Fairness through the lens of Metrics and Evaluation (AFME), at NeurIPS 2024
  with Awa Dieng, Miriam Rateike, and Golnoosh Farnadi
- 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

Award Committee

- ACP Early Career Researcher Award committee 2024
- ISSNAF Mario Gerla Young Investigator Award 2023

Service to Journals

- **Editorial Board Member** : Artificial Intelligence 2024–present
- **Associate Editor** : IISE 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

(Senior) Area Chair

- AAAI Conference on Artificial Intelligence (AAAI) 2025
- ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2023 – 2024
- International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2024
- International Joint Conference on Artificial Intelligence (IJCAI) 2024
- Neural Information Processing Systems (NeurIPS) 2024
- European Conference on Artificial Intelligence (ECAI) 2023 – 2024

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

Workshop/Tutorial Proposal Reviewer

- International Conference on Machine Learning (ICML) 2024
- Neural Information Processing Systems (NeurIPS) 2023, 2024
- International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2022

Program Committee

- Neural Information Processing Systems (NeurIPS) 2020 – 2023
- International Conference on Machine Learning (ICML) 2021 – 2024
- International Conference on Learning Representations (ICLR) 2021 – 2025
- 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

- Harvard Data Science Review 2024
- 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

- NSF, CISE Panel 2024
- Austrian Research Promotion Agency (FFG) 2023
- NSF, Eng Panel 2023
- NSF, NRT Panel 2022
- NSF, SaTC Panel 2022
- NSF, CISE 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)

- Search Committee (Teaching track) 2024
- 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