

Ferdinando FIORETTO

Assistant Professor

📍 307 Rice Hall, Computer Science, University of Virginia, Charlottesville, VA 22904 - U.S.A.

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

Education and Training

| | |
|-----------|---|
| Dec. 2019 | Georgia Institute of Technology, School of Industrial and System Engineering, Atlanta, GA |
| Sep. 2018 | POST-DOCTORAL RESEARCHER |
| Dec. 2018 | University of Michigan, Industrial and Operations Engineering, Ann Arbor, MI |
| Sep. 2016 | RESEARCH FELLOW |
| Aug. 2016 | University of Udine, 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 |

Research and Professional Experience

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| Current | University of Virginia, Computer Science, Charlottesville, VA |
| Jun. 2023 | ASSISTANT PROFESSOR |
| Jun. 2023 | Syracuse University, Electrical Engineering & Computer Science, Syracuse, NY |
| Jan. 2020 | ASSISTANT PROFESSOR |

Selected Honors and Awards

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| 2024 | Outstanding Research Faculty Award, University of Virginia. 🔗 Link |
| 2022 | Caspar Bowden PET Award, Privacy Enhancing Technologies (PETs). 🔗 Link |
| 2022 | NSF CAREER Award, National Science Foundation. 🔗 Press |
| 2022 | Google Research Scholar Award, Google. 🔗 Link |
| 2022 | Amazon Research Award, Amazon – AWS AI. 🔗 Link |
| 2022 | Best Paper Award, IEEE Transaction of Power System. 🔗 Link |
| 2022 | Early Career Spotlight, International Joint Conference on Artificial Intelligence (IJCAI). 🔗 Link |
| 2021 | Early Career Researcher Award, Association for Constraint Programming. 🔗 Link |
| 2021 | Mario Gerla Young Investigator Award for Research in Computer Science, ISSNAF. 🔗 Press |
| 2021 | Best Paper Award, IEEE Transaction of Power System. 🔗 Link |
| 2018 | Best AI Dissertation Award, AI*IA. 🔗 Press |

Selected Publications

Summary : > 77 Conference papers > 14 Journals articles > 2 Book chapters > 3 Editorial articles
> 31 Workshop papers > 20+ Preprints

Total citations : 2718 **H-index :** 27 [🎓 Google Scholar](#)

FULL PUBLICATION LIST AVAILABLE [here](#)

1. Vincenzo Di Vito, Mostafa Mohammadian, Kyri Baker, Ferdinando Fioretto. Learning To Solve Differential Equation Constrained Optimization Problems. International Conference on Learning Representations (ICLR), 2025.
2. Jacob K. Christopher, Michael Cardej, Brian R Bartoldson, Bhavya Kailkhura, Ferdinando Fioretto. Speculative Diffusion Decoding : Accelerating Language Generation through Diffusion. Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL), 2025.
3. Ferdinando Fioretto, Diptangshu Sen, Juba Ziani. Differentially Private Data Release on Graphs : Inefficiencies and Unfairness. International Conference on Artificial Intelligence and Statistics (AISTATS), 2025.
4. Joonhyuk Ko, Juba Ziani, Saswat Das, Matt Williams, Ferdinando Fioretto. Fairness Issues and Mitigations in (Differentially Private) Socio-demographic Data Processes. AAAI Conference on Artificial Intelligence (AAAI), 2025. **[Oral]**.
5. Khang Tran, Ferdinando Fioretto, Issa Khalil, My T. Thai, NhatHai Phan. FairDP : Certified Fairness with Differential Privacy. In IEEE Secure and Trustworthy Machine Learning Conference (SaTML 2025), 2025.
6. Jacob K Christopher and Ferdinando Fioretto. Constrained Synthesis with Projected Diffusion Models. Conference on Neural Information Processing Systems (NeurIPS), 2024.

7. Jacob K. Christopher, Michael Cardei, Brian R Bartoldson, Bhavya Kailkhura, Ferdinando Fioretto. Speculative Diffusion Decoding : Accelerating Language Generation through Diffusion. Conference on Neural Information Processing Systems (NeurIPS), 2024. [\[Oral at AI4Mat Workshop\]](#).
8. Sree Nelaturu, N. Ravichandran, Cuong Tran, Sara Hooker, and Ferdinando Fioretto. On The Fairness Impacts of Hardware Selection in Machine Learning. International Conference on Machine Learning (ICML), 2024.
9. Saswat Das, Marco Romanelli, Ferdinando Fioretto. Disparate Impact on Group Accuracy of Linearization for Private Inference. International Conference on Machine Learning (ICML), 2024.
10. My H. Dinh, James Kotary, Ferdinando Fioretto. End-to-End Learning for Fair Multiobjective Optimization Under Uncertainty. Conference of Uncertainty on Artificial Intelligence (UAI), 2024.
11. 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.
12. Cuong Tran, Keyu Zhu, Pascal Van Hentenryck, Ferdinando Fioretto. Fairness Increases Adversarial Vulnerability. International Joint Conference on Artificial Intelligence (IJCAI), 2024.
13. James Kotary, Vincenzo Di Vito, Jacob K. Christopher, Pascal Van Hentenryck, Ferdinando Fioretto. Predict-Then-Optimize by Proxy : Learning Joint Models of Prediction and Optimization. European Conference of Artificial Intelligence (ECAI), 2024.
7. My H. Dinh, James Kotary, Ferdinando Fioretto. Learning Fair Ranking Policies via Differentiable Optimization of Ordered Weighted Averages. ACM Conference on Fairness, Accountability, and Transparency (FAccT), 2024.
8. Ferdinando Fioretto, Keyu Zhu, Pascal Van Hentenryck, Saswat Das, Christine Task. Finding ϵ and δ of Traditional Disclosure Control Systems. AAAI Conference on Artificial Intelligence (AAAI), 2024.
9. Cuong Tran and Ferdinando Fioretto. Data Minimization at Inference Time. Conference on Neural Information Processing Systems (NeurIPS), 2023.
10. Vladimir Dvorkin and Ferdinando Fioretto. Price-Aware Deep Learning for Electricity Markets. Tackling Climate Change with Machine Learning, at NeurIPS, 2023.
11. James Kotary, My H. Dinh, Ferdinando Fioretto. Folded Optimization for End-to-End Model-Based Learning. International Joint Conference on Artificial Intelligence (IJCAI), 2023.
12. James Kotary, Vincenzo Di Vito, Ferdinando Fioretto, Pascal Van Hentenryck. SF-PATE : Scalable, Fair, and Private Aggregation of Teacher Ensembles. International Joint Conference on Artificial Intelligence (IJCAI), 2023.
13. James Kotary, Vincenzo Di Vito, Ferdinando Fioretto. End-to-End Combinatorial Ensemble Learning. International Joint Conference on Artificial Intelligence (IJCAI), 2023.
14. Cuong Tran, Ferdinando Fioretto. On the Fairness Impacts of Private Ensembles Models. International Joint Conference on Artificial Intelligence (IJCAI), 2023.
15. Terrence W.K. Mak, Ferdinando Fioretto, Pascal Van Hentenryck. Load Encoding for Learning AC-OPF. Proceedings of the IEEE PES General Meeting (PES), 2023.
16. 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.
17. James Kotary, Vincenzo Di Vito, Ferdinando Fioretto. End-to-End Optimization and Learning for Multiagent Ensembles. International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2023.
18. Cuong Tran, Ferdinando Fioretto, Jung-Eun Kim, Rakshit Naidu. Pruning has a disparate impact on model accuracy. Conference on Neural Information Processing Systems (NeurIPS), 2022. [\[Spotlight\]](#).
19. Keyu Zhu, Ferdinando Fioretto, Pascal Van Hentenryck. Post-processing of Differentially Private Data : A Fairness Perspective. International Joint Conference on Artificial Intelligence (IJCAI), 2022.
20. Ferdinando Fioretto, Cuong Tran, Keyu Zhu, Pascal Van Hentenryck. Differential Privacy and Fairness in Decisions and Learning Tasks : A Survey. International Joint Conference on Artificial Intelligence (IJCAI), 2022.
21. Ferdinando Fioretto. Integrating Machine Learning and Optimization to Boost Decision Making. International Joint Conference on Artificial Intelligence (IJCAI), 2022. [\[Early Career Spotlight\]](#).
22. James Kotary, Ferdinando Fioretto, Pascal Van Hentenryck, Ziwei Zhu. End-to-end Learning for Fair Ranking Systems. ACM Web Conferences (WWW), 2022.
23. James Kotary, Ferdinando Fioretto, Pascal Van Hentenryck. Fast Approximations for Job Shop Scheduling : A Lagrangian Dual Deep Learning Method. AAAI Conference on Artificial Intelligence (AAAI), 2022.
24. Lesia Mitridati, Emma Romei, Gabriela Hug, Ferdinando Fioretto. Differentially-Private Heat and Electricity Markets Coordination. International Conference on Probabilistic Methods Applied to Power Systems (PMAPS), 2022.
25. Mostafa Mohammadian, Kyri Baker, My H. Dinh, Ferdinando Fioretto. Learning Solutions for Intertemporal Power Systems Optimization with Recurrent Neural Networks. International Conference on Probabilistic Methods Applied to Power Systems (PMAPS), 2022.

26. Cuong Tran, My H. Dinh, **Ferdinando Fioretto**. Differentially Private Deep Learning under the Fairness Lens. *Conference on Neural Information Processing Systems (NeurIPS)*, 2021.
27. James Kotary, **Ferdinando Fioretto**, Pascal Van Hentenryck. Learning Hard Optimization Problems : A Data Generation Perspective. *Conference on Neural Information Processing Systems (NeurIPS)*, 2021.
28. Cuong Tran, **Ferdinando Fioretto**, Pascal Van Hentenryck, Zhiyan Yao. Decision Making with Differential Privacy under the Fairness Lens. *International Joint Conference on Artificial Intelligence (IJCAI)*, 560–566, 2021. [\[2022 Caspar Bowden PET Award\]](#).
29. James Kotary, **Ferdinando Fioretto**, Pascal Van Hentenryck, Bryan Wilder. End-to-End Constrained Optimization Learning : A Survey. *International Joint Conference on Artificial Intelligence (IJCAI)*, 4475–4482, 2021.
30. Keyu Zhu, Pascal Van Hentenryck, **Ferdinando Fioretto**. Bias and Variance of Post-processing in Differential Privacy. *AAAI Conference on Artificial Intelligence (AAAI)*, 11177–11184, 2021.
31. Cuong Tran, **Ferdinando Fioretto**, Pascal Van Hentenryck. Differentially Private and Fair Deep Learning : A Lagrangian Dual Approach. *AAAI Conference on Artificial Intelligence (AAAI)*, 9932–9939, 2021.
32. **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. *European Conference on Machine Learning (ECML)*, 18–135, 2020.
33. **Ferdinando Fioretto**, Lesia Mitridati, Pascal Van Hentenryck. Differential Privacy Stackebelg Games. *International Joint Conference on Artificial Intelligence (IJCAI)*, 3480–3486, 2020.
34. **Ferdinando Fioretto**, Pascal Van Hentenryck. OptStream : Releasing Time Series Privately. *International Joint Conference on Artificial Intelligence (IJCAI)*, 5135–5139, 2020. [\[Invited journal paper\]](#).
35. Terrence W.K. Mak, **Ferdinando Fioretto**, Pascal Van Hentenryck. Privacy-Preserving Obfuscation for Distributed Power Systems. *Power Systems Computation Conference (PSCC)*, 2020.
36. **Ferdinando Fioretto**, Terrence W.K. Mak, Pascal Van Hentenryck. Predicting AC Optimal Power Flows : Combining Deep Learning and Lagrangian Dual Methods. *AAAI Conference on Artificial Intelligence (AAAI)*, pages 630–637, 2020.
37. Atena Tabakhi, William Yeoh, **Ferdinando Fioretto**. The Smart Appliance Scheduling Problem : A Bayesian Optimization Approach. *International Conference on Principles and Practice of Multi-Agent Systems (PRIMA)*, 100–115, 2020.
38. **Ferdinando Fioretto**, Pascal Van Hentenryck. Privacy-Preserving Federated Data Sharing. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 638–646, 2019.
39. **Ferdinando Fioretto**, Terrence W.K. Mak, Pascal Van Hentenryck. Privacy-Preserving Obfuscation of Critical Infrastructure Networks. *International Joint Conference on Artificial Intelligence (IJCAI)*, pages 1086–1092, 2019.
40. **Ferdinando Fioretto**, Pascal Van Hentenryck. Differential Privacy of Hierarchical Census Data : An Optimization Approach. *International Conference on Principles and Practice of Constraint Programming (CP)*, pages 639–655, 2019. [\[Invited to Constraint journal\]](#).

Selected Synergistic Activities

- > **Editorial Board Member :**
 Artificial Intelligence Journal 2024 – current
- > **Conference co-chair and Organizing Committee :**
 - Conference Chair :** International Conference on Principles and Practice of Constraint Programming (CP) 2022
 - Track Chair :** International Joint Conference on Artificial Intelligence (IJCAI) 2023
 - Tutorial Chair :** International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2022
- > **Workshop co-organizer :**
 - Workshop on Privacy Preserving Artificial Intelligence, (at AAAI) 2020 – 2026
 - Workshop on Optimization and Learning in Multi-Agent Systems, at AAMAS 2018 – 2022
 - Algorithmic Fairness through the Lens of Causality and Privacy, (at NeurIPS) 2022 – 2025
 - Workshop on Machine Learning for Operational Research, (at AAAI) 2022, 2024
- > **(Senior) Area Chair :**
 - AAAI Conference on Artificial Intelligence (AAAI) 2020 – 2026
 - International Joint Conference on Artificial Intelligence (IJCAI) 2021 – 2025
 - International Conference on Machine Learning (ICML) 2025
 - ACM Conference on Fairness, Accountability, and Transparency (FAccT) 2023 – 2025
 - European Conference on Machine Learning (ECML) 2023 – 2024
 - European Conference on Artificial Intelligence (ECAI) 2023 – 2024

Collaborations and Affiliations

| Name | Organizational Affiliation | Last Active |
|-------------------------------|--|-------------|
| Cormode, Graham | Meta | 02/24 |
| Steinke, Thomas | Google Research | 02/24 |
| Tao, Yuchao | Duke University | 02/24 |
| Pujol, David | Tumult Labs | 02/24 |
| Machanavajjhala, Ashwin | Duke University | 02/24 |
| Ye, Jiayuan | National University of Singapore | 02/24 |
| Shokri, Reza | National University of Singapore | 02/24 |
| Thakurta, Abhradeep | Google DeepMind | 02/24 |
| Papernot, Nicolas | University of Toronto and Vector Institute | 02/24 |
| Bonawitz, Kallista | Google | 02/24 |
| Kairouz, Peter | Google | 02/24 |
| McMahan, Brendan | Google | 02/24 |
| Ramage, Daniel | Google | 02/24 |
| M. Abowd, John | Cornell University | 02/24 |
| B Hawes, Michael | US Census | 02/24 |
| Kifer, Daniel | Penn State University | 02/24 |
| M. Suriyakumar, Vinith | Massachusetts Institute of Technology | 02/24 |
| Goldenberg, Anna, | The Hospital for Sick Children | 02/24 |
| Ghassemi, Marzyeh | Massachusetts Institute of Technology | 02/24 |
| Anderson, James | Columbia University | 02/24 |
| Zhou, Fengyu | California Institute of Technology | 02/24 |
| H. Low, Steven | California Institute of Technology | 02/24 |
| Fan, Liyue | University of North Caroline | 02/24 |
| Gaboardi, Marco | Boston University | 02/24 |
| Hay, Michael | Colgate University | 02/24 |
| Vadhan, Salil | Harvard University | 02/24 |
| Gipson, Bryant | Google | 02/24 |
| Terzis, Andreas | Google | 02/24 |
| Sushko, Yurii | Google | 02/24 |
| Desfontaines, Damien | Tumult Labs | 02/24 |
| Cherubin, Giovanni | Alan Turing Institute | 02/24 |
| Chatzikokolakis, Konstantinos | University of Athens | 02/24 |
| Palamidessi, Catuscia | Inria and Institut Polytechnique de Paris | 02/24 |
| Seeman, Jeremy | Pennsylvania State University | 02/24 |
| Cummings, Rachel | Columbia University | 02/24 |
| Baek, Stephen | University of Virginia | 02/24 |
| (Continue to next page) | | |

| Name | Organizational Affiliation | Last Active |
|------------------------|--------------------------------------|-------------|
| Romanelli, Marco | New York University | 02/24 |
| Zhang, Aidong | University of Virginia | 01/24 |
| Wang, Tianhao | University of Virginia | 01/24 |
| Evans, David | University of Virginia | 01/24 |
| Behl, Madhur | University of Virginia | 01/24 |
| Li, Sheng | University of Virginia | 01/24 |
| Heng Huang | University of Maryland, College Park | 01/24 |
| Koenig, Sven | University of Southern California | 01/24 |
| Pan, Hai | New Jersey Institute of Technology | 01/24 |
| Hooker, Sara | Cohere AI | 11/23 |
| Task, Christine | Knexus Research | 10/23 |
| Dvorkin, Vladimir | University of Michigan | 11/23 |
| Van Hentenryck, Pascal | Georgia Institute of Technology | 08/23 |
| Yeoh, William | Washington University in St. Louis | 01/23 |
| My T. Thai | University of Florida | 01/23 |
| Pontelli, Enrico | New Mexico State University | 01/22 |
| Soundarajan, Sucheta | Syracuse University | 01/22 |
| Bowen, Claire | Urban Institute | 01/22 |
| Wang, Yeqing | Syracuse University | 01/22 |
| Baker, Kyri | UC Boulder | 01/24 |
| Zivan, Roie | Ben-Gurion University | 01/22 |
| Wilder, Bryan | Carnegie Mellon University | 01/21 |
| Mak, Terrence, W. K. | Georgia Institute of Technology | 04/21 |
| Tabakhi, Atena, M. | Washington University in St. Louis | 12/20 |
| Lombardi, Michele | University of Bologna | 01/20 |
| Pinson, Pierre | Technical University of Denmark | 01/20 |
| Kazempour, Jalal | Technical University of Denmark | 01/20 |