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 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
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

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

SELECTED HONORS AND AWARDS

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

FULL PUBLICATION LIST AVAILABLE *"here"*

1. Jacob K Christopher and **Ferdinando Fioretto**. *"Constrained Synthesis with Projected Diffusion Models"*. Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2024.
2. Jacob K. Christopher, Michael Cardei, Brian R Bartoldson, Bhavya Kailkhura, **Ferdinando Fioretto**. *"Speculative Diffusion Decoding : Accelerating Language Generation through Diffusion"*. Proceedings of the Conference on Neural Information Processing Systems (NeurIPS), 2024.
3. Sree Nelaturu, N. 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.
4. 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.
5. 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.
6. Cuong Tran, Keyu Zhu, Pascal Van Hentenryck, **Ferdinando Fioretto**. *"Fairness Increases Adversarial Vulnerability"*. Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI), 2024.
7. 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.

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

9. Cuong Tran and **Ferdinando Fioretto**. *"Data Minimization at Inference Time"*. *Proceedings of the* Conference on Neural Information Processing Systems (NeurIPS), 2023.

10. Mostafa Mohammadian, Kyri Baker, **Ferdinando Fioretto**. *"Gradient-Enhanced Physics-Informed Neural Networks for Power Systems Operational Support"*. Electric Power Systems Research, pages 109551, 2023.

11. 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.

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

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

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. **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.

MENTORSHIP AND IMPACT, IN NUMBERS

Mentorship : Currently mentoring 8 PhD students and 3 undergraduate students.   Previously mentored 20+ undergraduate students, 5 MS students, and 5 PhD students.

Invited Talks and Media Engagements : Delivered over 60 talks and media interviews.

Research Funds : External : $2.85M ($2.39M as PI) | Internal : $81K

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 Optimization and Learning in Multi-Agent Systems, at AAMAS	2018 – 2022
Workshop on Privacy Preserving Artificial Intelligence, (at AAAI)	2020 – 2025
Algorithmic Fairness through the Lens of Causality and Privacy, (at NeurIPS)	2022 – 2024
Workshop on Machine Learning for Operational Research, (at AAAI)	2022, 2024

> Area Chair :

AAAI Conference on Artificial Intelligence (AAAI)	2020 – 2025
International Joint Conference on Artificial Intelligence (IJCAI)	2021 – 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
Conference on Neural Information Processing Systems (NeurIPS)	2024
International Conference on Autonomous Agents and Multiagent Systems (AAMAS)	2024