

FRANCESCO FABIANO

Curriculum Vitae

PERSONAL INFORMATION

🏠	ADDRESS	via Caumont Caimi, 12 Felino (PR), Italy
☎	CELL PHONE	(+39) 347 6957191
🏛	AFFILIATIONS	Oxford University
✉	PERSONAL E-MAIL	fabianofrancesco.cs@gmail.com
🌐	WEBPAGE	https://francescofabiano.github.io

RESEARCH INTERESTS

Artificial Intelligence • Hybrid AI Systems • Multi-agent Systems • Automated Planning • Logic/Constraint Programming • Epistemic/Doxastic Reasoning • Knowledge Representation • Belief Manipulation • Belief Update

LANGUAGES

Italian	<i>native speaker</i>
English	<i>highly proficient in both spoken and written language</i>
Spanish	<i>basic knowledge</i>



WORK EXPERIENCE

01/2025–
ongoing **Associate Researcher**

Employers: University of Oxford, Oxford, United Kingdom
Description: Part of the UKRI AI Hub at the University of Oxford which is focused on investigating the Computational Foundations of AI, with particular focus on Understanding Decision Making.

08/2023–
08/2024 **Assistant Professor**

Employers: New Mexico State University, Las Cruces (NM), USA
Description: Structured and taught undergraduate and graduate courses at the Computer Science Department. Furthermore, I focused on research in neuro-symbolic AI, automated planning, multi-agent epistemic reasoning, and computational logic.

Courses: SUMMER 2024 “Applied Machine Learning I” (CS 487/519).
SPRING 2024 “Analysis of Algorithms” (CS 570); “Applied Machine Learning I” (CS 487/519); and “Python Programming I” (CS 153/453).
FALL 2023 “Parallel Programming” (CS 491/521); “Python Programming I” (CS 153/453); and “C++ Programming” (CS 151/451).

01/2023–
07/2023 **Adjunct Professor**

Employers: Saint Joseph’s University, Philadelphia (PA), USA
Description: Structured and taught the undergraduate and graduate courses offered by the “Decision & System Sciences” curriculum at the Erivan K. Haub School of Business. Moreover, I focused on research in neuro-symbolic AI, automated planning, and computational logic

Courses: SUMMER 2023 “Advanced Python Programming” (DSS 770).
SPRING 2023 “BIA: Concepts & Practices” (DSS 315); “Python Programming” (DSS 615); “Advanced Python Programming” (DSS 693).

10/2022–
09/2023 **Adjunct Professor** – “Typing in L^AT_EX”

Employers: University of Parma, Parma, Italy
Description: Structured and taught the undergraduate course “*Typing in L^AT_EX*”, open to all the students of the University. The course was designed to help the students acquire the necessary capabilities to realize documents using the typesetting language L^AT_EX. The teaching was comprised of 24 hours (equivalent to 3 Italian credits) of frontal lectures and exercises. Finally, the evaluation was based on a project.

01/2021–12/2022 **Research Fellowship** – “*Artificial Intelligence for packaging production lines*”

Employers: University of Parma, Parma, Italy & ACMI S.P.A., Fornovo Taro (PR), Italy
Description: Implemented an automated reasoning tool that makes use of innovative techniques (*e.g.*, constraint programming, planning, etc.) to model production processes and that returns an optimized and safe plan that controls the robotic components in the production line.

04/2020–ongoing **Joint Researcher** (telecommuting due to COVID-19 pandemic)

Employers: International Business Machines (IBM) Corporation, Yorktown Heights (NY), USA
Description: Participated at the IBM exploratory challenge #2106, as representative of the University of Udine. The project, coordinated by Francesca Rossi, aimed to develop a general and robust Artificial Intelligence paradigm starting from cognitive theories such as the one proposed by D. Kahneman in his book “Thinking Fast and Slow”.

08/2017–05/2018 **Web Master**

Employer: New Mexico State University, Las Cruces (NM), USA
Description: Migrated the website of the College of Arts and Sciences to a user-friendly platform to simplify the College’s staff work. After the migration, support and maintenance for the website was provided.

01/2017–07/2017 **Research Assistant**

Employer: New Mexico State University, Las Cruces (NM), USA
Description: Studied, under Prof. Enrico Pontelli, the design of an epistemic forward planner with particular attention to heuristics for the solving process and optimizations for the underlying knowledge representation.

EDUCATION

04/2020–ongoing **Joint Study** (telecommuting due to COVID-19 pandemic)
International Business Machines (IBM) Corporation, Yorktown Heights (NY), USA

Advisor: Prof. Francesca Rossi
Research: Define new neuro-symbolic frameworks inspired by cognitive theories.

11/2018–10/2021 **Ph.D. in Computer Science, cum Laude**
University of Udine, Udine, Italy

Award: **Best Ph.D. Thesis** Award by GULP, 2022 (500 €)
Advisors: Profs. Agostino Dovier, Alessandro Dal Palù and Enrico Pontelli
Thesis title: “*Planning while Believing to Know*”

01/2017–05/2018 **Master’s Degree in Computer Science**
New Mexico State University, Las Cruces (NM), USA

Final GPA: **3.88/4.00**
 Advisor: Prof. Enrico Pontelli
 Thesis title: *“EFP and PG-EFP: Epistemic Forward Planners in multi-agent domains”*

10/2013–
12/2016 **Bachelor’s Degree in Computer Science**
 University of Parma, Parma, Italy

Award: **Best UniPR Computer Science Student** Award by UNICT & Cisita, 2015
 Final mark: **109/110**
 Advisor: Prof. Alessandro Dal Palù
 Thesis title: *“Load distribution analysis in an MPI framework”*

09/2008–
06/2013 **Liceo Scientifico G. Marconi**
 Parma, Italy

Final mark: **96/100**

GRANTS & AWARDS

UNICT & Cisita	Best UniPR Computer Science Student Award		2015
University of Udine	Ph.D. Scholarship	€ 15 343 <i>p.a.</i>	2018/2021
University of Parma & ACMI S.P.A.	Research Fellowship	€ 27 088 <i>p.a.</i>	2021/2022
Gruppo ricercatori e Utenti Logic Programming	Ph.D. Thesis Award	€ 500	2022
USA National Institute of Standards and Technology	Research Grant (sub-contract)	\$ 1 000	2023
The Pedro Arrupe, S.J., Center for Bussiness Ethics	PRME/SDG Dashboard Research Fellow	\$ 9 000	2023/2024
USA National Institute of Standards and Technology	Research Grant (sub-contract)	\$ 10 000	2024

TEACHING/DIVULGATION

Teaching

CS 570 <i>“Analysis of Algorithms”</i>	New Mexico State University	2023
CS 487/519 <i>“Applied Machine Learning I”</i>	New Mexico State University	2023
CS 491/521 <i>“Parallel Programming”</i>	New Mexico State University	2023
CS 153/453 <i>“Python Programming I”</i>	New Mexico State University	2023
CS 151/451 <i>“C++ Programming”</i>	New Mexico State University	2023
DSS 770 <i>“Advanced Python Programming”</i>	Saint Joseph’s University	2023
DSS 693 <i>“Advanced Python Programming”</i>	Saint Joseph’s University	2023
DSS 615 <i>“Python Programming”</i>	Saint Joseph’s University	2023
DSS 315 <i>“Business Intelligence & Analytics: Concepts & Practices”</i>	Saint Joseph’s University	2023
<i>“Typing in L^AT_EX”</i>	University of Parma	2022/2023
<i>“Algorithms and Data Structures”</i> (Teaching Assistant)	University of Udine	2020/2021

Conference Presentations

"H-EFP: Bridging Efficiency in Multi-Agent Epistemic Planning with Heuristics"	PRIMA 2024	20/11/2024
"An Explainable Multilingual Framework for Data Analysis Narration"	ICLP 2024	17/10/2024
"Multi-agent Epistemic Planning with Inconsistent Beliefs, Trust and Lies"	PRICAI 2021	09/11/2021
"Comprehensive Multi-Agent Epistemic Planning"	DC @ ICLP 2021	22/09/2021
"E-PDDL: A Standardized Way of Defining Epistemic Planning Problems"	KEPS @ ICAPS 2021	05/08/2021
"EFP 2.0: A Multi-Agent Epistemic Solver with Multiple e-State Representations"	ICAPS 2020	27/10/2020
"An ASP approach for arteries classification in CT-scans"	CILC 2020	15/10/2020
"Towards a Complete Characterization of Epistemic Reasoning"	CILC 2020	13/10/2020
"Design of a Solver for Multi-Agent Epistemic Planning"	ICLP 2019	24/09/2019
"Design of a Solver for Multi-Agent Epistemic Planning"	DC @ ICLP 2019	22/09/2019
"Non-Well-Founded Set Based Multi-Agent Action Language"	CILC 2019	27/08/2019

Seminars and Talks

"Modeling Multi-Agent Epistemic Planning in ASP"	Declarative Programming class @ UniPR	16/12/2024
"Planning while Believing to Know"	Haub Innovation Speaker @ SJU	17/02/2023
"Modeling Multi-Agent Epistemic Planning in ASP"	Declarative Programming class @ UniPR	30/11/2022
"Thinking Fast and Slow in AI"	AI4HRC workshop @ UniUD	28/03/2022
"Planning while Believing to Know"	ES seminar @ FBK	14/02/2020
"Modeling Multi-Agent Epistemic Planning in ASP"	Automated Reasoning class @ UniUD	12/12/2020
"Epistemic Reasoning in Crime Reconstruction"	COST Action 17124 meeting	09/12/2019
"A Study on Fingerprint Inheritance through AI"	COST Action 17124 meeting	09/11/2019
"Ill-Founded Multi-Agent Epistemic Action Language"	iFM ² seminar @ UniUD	11/06/2019
"Inheritance in Fingerprints"	GNCS-2019 workshop @ UniPR	04/06/2019
"Epistemic Planning"	GNCS-2019 workshop @ UniPR	03/06/2019

Theses Co-Advisor

4 Master Theses, University of Udine • 18 Bachelor Theses, Universities of Udine & Parma

SCIENTIFIC CONTRIBUTIONS

Projects Participation

GNCS-2023	"ARICSxAI: Automated Reasoning Interpretation of CT-Scans and xAI"
GNCS-2022	"InSANE: Investigating Sparse Algorithms in the post von Neumann Era"
GNCS-2020	"NoRMA: Automazione del Ragionamento Non-Monotono su Moderne Architetture Parallele"
GNCS-2019	"Logic Programming for Early Detection of Pancreatic Cancer"
PRID-ENCASE 2019	"Efforts in the Understanding of Complex Interacting Systems"

Research Proposal/Grants Reviewer

Dutch Research Council (NWO), 2024 – Research Proposal

Chair

PRIMA, 2024 – Session Chair • SYNERGY @KR, 2024 – Organizer & Chair • ICLP & LPNMR, 2024 – Autumn School on Logic Programming Organizer • ICLP & LPNMR, 2024 – Doctoral Consortium Organizer & Chair • ICLP, 2023 – Doctoral Consortium Organizer & Chair • ICLP 2023, Session Chair

PC Member

IJCAI, 2025 • AAI, 2025 • AIES, 2024 • ICLP, 2024 • IJCAI, 2024 • AAI, 2024 • ICLP, 2023 • CILC, 2023 • IEEE ICTAI, 2022 • ACAIN, 2022 • OVERLAY, 2022 • CILC, 2022 • IJCAI, 2022 • IEEE ICTAI, 2021 • IJCAI, 2021

Journal Reviews

International Journal of Computer Theory and Engineering (IJCTE), 2024 • Journal of Artificial Intelligence Research (JAIR), 2024 • Journal of Computer Languages (COLA), 2024 • The Journal of Supercomputing, 2024 • Journal of Logic and Computation (JLC), 2023 • Journal of Artificial Intelligence (AIJ), 2019

Conference Reviews and Sub-Reviews

PADL, 2024 • AAMAS, 2023 • AIxIA, 2022 • CP, 2022 • IJCAI, 2022 • IEEE ICTAI, 2021 • IJCAI, 2021 • ECAI, 2020 • ICLP, 2020 • IEEE ICTAI, 2020 • IJCAI, 2020 • AIIA, 2019 • LPNMR, 2019

1. Bertini, F., Palù, A. D., Fabiano, F., Formisano, A. & Zaglio, F. *Concept2Text: An Explainable Multilingual Rewriting of Concepts into Natural Language* in *Proceedings of the 39th Italian Conference on Computational Logic, Rome, Italy, June 26-28, 2024* (eds Angelis, E. D. & Proietti, M.) **3733** (CEUR-WS.org, 2024). <https://ceur-ws.org/Vol-3733/paper14.pdf>.
2. Pallagani, V. et al. *On the Prospects of Incorporating Large Language Models (LLMs) in Automated Planning and Scheduling (APS)* in *Proceedings of the Thirty-Fourth International Conference on Automated Planning and Scheduling, ICAPS 2024, Banff, Alberta, Canada, June 1-6, 2024* (eds Bernardini, S. & Muise, C.) (AAAI Press, 2024), 432–444. <https://doi.org/10.1609/icaps.v34i1.31503>.
3. Fabiano, F. et al. *Fast and Slow Planning*. *CoRR* **abs/2303.04283**. arXiv: [2303.04283](https://arxiv.org/abs/2303.04283). <https://doi.org/10.48550/arXiv.2303.04283> (2023).
4. Ganapini, M. B. et al. *Value-based Fast and Slow AI Nudging in Proceedings of the Workshop on Ethics and Trust in Human-AI Collaboration: Socio-Technical Approaches (ETHAICS 2023) co-located with 32nd International Joint Conference on Artificial Intelligence (IJCAI 2023) Macao, August 21, 2023., Macao, August 21, 2023* (eds Ganapini, M. B. et al.) **3547** (CEUR-WS.org, 2023). <https://ceur-ws.org/Vol-3547/paper6.pdf>.
5. Pallagani, V. et al. *Plansformer Tool: Demonstrating Generation of Symbolic Plans Using Transformers* in *Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence, IJCAI 2023, 19th-25th August 2023, Macao, SAR, China* (ijcai.org, 2023), 7158–7162. <https://doi.org/10.24963/ijcai.2023/839>.
6. Pallagani, V. et al. *Understanding the Capabilities of Large Language Models for Automated Planning*. *CoRR* **abs/2305.16151**. arXiv: [2305.16151](https://arxiv.org/abs/2305.16151). <https://doi.org/10.48550/arXiv.2305.16151> (2023).
7. (eds Pontelli, E. et al.) *Proceedings 39th International Conference on Logic Programming, ICLP 2023, Imperial College London, UK, 9th July 2023 - 15th July 2023* **385** (2023). <https://doi.org/10.4204/EPTCS.385>.
8. Soldà, D., Fabiano, F. & Dovier, A. ECHO: A hierarchical combination of classical and multi-agent epistemic planning problems. *J. Log. Comput.* **33**, 1804–1831. <https://doi.org/10.1093/logcom/exad036> (2023).
9. Bertini, F., Palù, A. D., Fabiano, F. & Iotti, E. *CARING for xAI* in *Proceedings of the 37th Italian Conference on Computational Logic, Bologna, Italy, June 29 - July 1, 2022* (eds Calegari, R., Ciatto, G. & Omicini, A.) **3204** (CEUR-WS.org, 2022), 47–60. <https://ceur-ws.org/Vol-3204/paper\5.pdf>.
10. Burigana, A. & Fabiano, F. *The Epistemic Planning Domain Definition Language (Short Paper)* in *Proceedings of the 10th Italian workshop on Planning and Scheduling (IPS 2022), RCRA Incontri E Confronti (RiCeRcA 2022), and the workshop on Strategies, Prediction, Interaction, and Reasoning in Italy (SPIRIT 2022) co-located with 21st International Conference of the Italian Association for Artificial Intelligence (AIIA 2022), November 28 - December 2, 2022, University of Udine, Udine, Italy* (eds Benedictis, R. D. et al.) **3345** (CEUR-WS.org, 2022). <https://ceur-ws.org/Vol-3345/paper5\2497.pdf>.
11. Fabiano, F. & Palù, A. D. An ASP approach for arteries classification in CT scans. *J. Log. Comput.* **32**, 331–346. <https://doi.org/10.1093/logcom/exab087> (2022).
12. Ganapini, M. B. et al. *Combining Fast and Slow Thinking for Human-like and Efficient Decisions in Constrained Environments* in *Proceedings of the 16th International Workshop on Neural-Symbolic Learning and Reasoning as part of the 2nd International Joint Conference on Learning & Reasoning (IJCLR 2022), Cumberland Lodge, Windsor Great Park, UK, September 28-30, 2022* (eds d'Avila Garcez, A. S. & Jiménez-Ruiz, E.) **3212** (CEUR-WS.org, 2022), 171–185. <https://ceur-ws.org/Vol-3212/paper12.pdf>.
13. Ganapini, M. B. et al. *Combining Fast and Slow Thinking for Human-like and Efficient Navigation in Constrained Environments*. *CoRR* **abs/2201.07050**. arXiv: [2201.07050](https://arxiv.org/abs/2201.07050). <https://arxiv.org/abs/2201.07050> (2022).
14. Ganapini, M. B. et al. *Thinking Fast and Slow in AI: The Role of Metacognition in Machine Learning, Optimization, and Data Science - 8th International Workshop, LOD 2022, Certosa di Pontignano, Italy, September 19-22, 2022, Revised Selected Papers, Part II* (eds Nicosia, G. et al.) **13811** (Springer, 2022), 502–509. <https://doi.org/10.1007/978-3-031-25891-6\38>.
15. Pallagani, V. et al. *Plansformer: Generating Symbolic Plans using Transformers*. *CoRR* **abs/2212.08681**. arXiv: [2212.08681](https://arxiv.org/abs/2212.08681). <https://doi.org/10.48550/arXiv.2212.08681> (2022).
16. Soldà, D., Fabiano, F. & Dovier, A. *Epistemic Multiagent Reasoning with Collaborative Robots* in *Proceedings of the 37th Italian Conference on Computational Logic, Bologna, Italy, June 29 - July 1, 2022* (eds Calegari, R., Ciatto, G. & Omicini, A.) **3204** (CEUR-WS.org, 2022), 32–46. <https://ceur-ws.org/Vol-3204/paper\4.pdf>.
17. Booch, G. et al. *Thinking Fast and Slow in AI* in *Thirty-Fifth AAAI Conference on Artificial Intelligence, AAAI 2021, Thirty-Third Conference on Innovative Applications of Artificial Intelligence, IAAI 2021, The Eleventh Symposium on Educational Advances in Artificial Intelligence, EAAI 2021, Virtual Event, February 2-9, 2021* (AAAI Press, 2021), 15042–15046. <https://doi.org/10.1609/aaai.v35i17.17765>.

18. Fabiano, F. *Comprehensive Multi-Agent Epistemic Planning* in *Proceedings 37th International Conference on Logic Programming (Technical Communications), ICLP Technical Communications 2021, Porto (virtual event), 20-27th September 2021* (eds Formisano, A. et al.) **345** (2021), 248–257. <https://doi.org/10.4204/EPTCS.345.41>.
19. Fabiano, F., Burigana, A., Dovier, A., Pontelli, E. & Son, T. C. *Multi-agent Epistemic Planning with Inconsistent Beliefs, Trust and Lies* in *PRICAI 2021: Trends in Artificial Intelligence - 18th Pacific Rim International Conference on Artificial Intelligence, PRICAI 2021, Hanoi, Vietnam, November 8-12, 2021, Proceedings, Part I* (eds Pham, D. N., Theeramunkong, T., Governatori, G. & Liu, F.) **13031** (Springer, 2021), 586–597. https://doi.org/10.1007/978-3-030-89188-6_44.
20. Fabiano, F. et al. E-PDDL: A Standardized Way of Defining Epistemic Planning Problems. *CoRR* **abs/2107.08739**. arXiv: **2107.08739**. <https://arxiv.org/abs/2107.08739> (2021).
21. Fabiano, F. et al. *Epistemic Planning in a Fast and Slow Setting* in *Proceedings of the Thinking Fast and Slow and Other Cognitive Theories in AI, a AAAI 2022 Fall Symposium, Westin Arlington Gateway in Arlington, Virginia, November 17-19, 2022* (eds Ganapini, M. B. et al.) **3332** (CEUR-WS.org, 2021). <http://ceur-ws.org/Vol-3332/paper7.pdf>.
22. Ganapini, M. B. et al. *Combining Fast and Slow Thinking for Human-like and Efficient Navigation in Constrained Environments* in *Proceedings of the Thinking Fast and Slow and Other Cognitive Theories in AI, a AAAI 2022 Fall Symposium, Westin Arlington Gateway in Arlington, Virginia, November 17-19, 2022* (eds Ganapini, M. B. et al.) **3332** (CEUR-WS.org, 2021). <http://ceur-ws.org/Vol-3332/paper10.pdf>.
23. Ganapini, M. B. et al. Thinking Fast and Slow in AI: the Role of Metacognition. *CoRR* **abs/2110.01834**. arXiv: **2110.01834**. <https://arxiv.org/abs/2110.01834> (2021).
24. Booch, G. et al. Thinking Fast and Slow in AI. *CoRR* **abs/2010.06002**. arXiv: **2010.06002**. <https://arxiv.org/abs/2010.06002> (2020).
25. Burigana, A., Fabiano, F., Dovier, A. & Pontelli, E. Modelling Multi-Agent Epistemic Planning in ASP. *Theory Pract. Log. Program.* **20**, 593–608. <https://doi.org/10.1017/S1471068420000289> (2020).
26. Burigana, A., Fabiano, F., Dovier, A. & Pontelli, E. Modelling Multi-Agent Epistemic Planning in ASP. *CoRR* **abs/2008.03007**. arXiv: **2008.03007**. <https://arxiv.org/abs/2008.03007> (2020).
27. Fabiano, F. *Towards a Complete Characterization of Epistemic Reasoning: the Notion of Trust* in *Proceedings of the 35th Italian Conference on Computational Logic - CILC 2020, Rende, Italy, October 13-15, 2020* (eds Calimeri, F., Perri, S. & Zumpano, E.) **2710** (CEUR-WS.org, 2020), 21–35. <https://ceur-ws.org/Vol-2710/paper2.pdf>.
28. Fabiano, F., Burigana, A., Dovier, A. & Pontelli, E. *EFP 2.0: A Multi-Agent Epistemic Solver with Multiple E-State Representations* in *Proceedings of the Thirtieth International Conference on Automated Planning and Scheduling, Nancy, France, October 26-30, 2020* (eds Beck, J. C., Buffet, O., Hoffmann, J., Karpas, E. & Sohrabi, S.) (AAAI Press, 2020), 101–109. <https://ojs.aaai.org/index.php/ICAPS/article/view/6650>.
29. Fabiano, F. & Palù, A. D. *An ASP Approach for Arteries Classification in CT-scans* in *Proceedings of the 35th Italian Conference on Computational Logic - CILC 2020, Rende, Italy, October 13-15, 2020* (eds Calimeri, F., Perri, S. & Zumpano, E.) **2710** (CEUR-WS.org, 2020), 312–326. <https://ceur-ws.org/Vol-2710/paper20.pdf>.
30. Fabiano, F. *Design of a Solver for Multi-Agent Epistemic Planning* in *Proceedings 35th International Conference on Logic Programming (Technical Communications), ICLP 2019 Technical Communications, Las Cruces, NM, USA, September 20-25, 2019* (eds Bogaerts, B. et al.) **306** (2019), 403–412. <https://doi.org/10.4204/EPTCS.306.54>.
31. Fabiano, F., Riouak, I., Dovier, A. & Pontelli, E. *Non-Well-Founded Set Based Multi-Agent Epistemic Action Language* in *Proceedings of the 34th Italian Conference on Computational Logic, Trieste, Italy, June 19-21, 2019* (eds Casagrande, A. & Omodeo, E. G.) **2396** (CEUR-WS.org, 2019), 242–259. <https://ceur-ws.org/Vol-2396/paper38.pdf>.
32. Le, T., Fabiano, F., Son, T. C. & Pontelli, E. *EFP and PG-EFP: Epistemic Forward Search Planners in Multi-Agent Domains* in *Proceedings of the Twenty-Eighth International Conference on Automated Planning and Scheduling, ICAPS 2018, Delft, The Netherlands, June 24-29, 2018* (eds de Weerd, M., Koenig, S., Röger, G. & Spaan, M. T. J.) (AAAI Press, 2018), 161–170. <https://aaai.org/ocs/index.php/ICAPS/ICAPS18/paper/view/17733>.