

# FRANCESCO FABIANO

## Curriculum Vitae

### PERSONAL INFORMATION

 ADDRESS via Caumont Caimi, 12 Felino (PR), Italy  
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 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 *native speaker*  
English *highly proficient in both spoken and written language*  
Spanish *basic knowledge*



### 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**

## WORK EXPERIENCE

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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).

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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).

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10/2022–  
09/2023

### Adjunct Professor – “*Typing in L<sup>A</sup>T<sub>E</sub>X*”

Employers: University of Parma, Parma, Italy  
Description: Structured and taught the undergraduate course “*Typing in L<sup>A</sup>T<sub>E</sub>X*”, 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<sup>A</sup>T<sub>E</sub>X. 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.

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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.

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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*”.

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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.

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01/2017– **Research Assistant**

07/2017

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.

## GRANTS & AWARDS

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UNICT & CisitA	Best UniPR Computer Science Student Award		2015
University of Udine	Ph.D. Scholarship	€ 15 343 p.a.	2018/2021
University of Parma & ACMI S.P.A.	Research Fellowship	€ 27 088 p.a.	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

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### Teaching

CS 570 “Analysis of Algorithms”	New Mexico State University	2023
CS 487/519 “Applied Machine Learning I”	New Mexico State University	2023
CS 491/521 “Parallel Programming”	New Mexico State University	2023
CS 153/453 “Python Programming I”	New Mexico State University	2023
CS 151/451 “C++ Programming”	New Mexico State University	2023
DSS 770 “Advanced Python Programming”	Saint Joseph’s University	2023
DSS 693 “Advanced Python Programming”	Saint Joseph’s University	2023
DSS 615 “Python Programming”	Saint Joseph’s University	2023
DSS 315 “Business Intelligence & Analytics: Concepts & Practices”	Saint Joseph’s University	2023
“Typing in L <sup>A</sup> T <sub>E</sub> X”	University of Parma	2022/2023
“Algorithms and Data Structures” (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

"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 <sup>2</sup> 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"

### Chair

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

### PC Member

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

### Journal Reviews

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 • AIAA, 2019 • LPNMR, 2019

## SCIENTIFIC PUBLICATIONS

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://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 (AixIA 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> (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://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). <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. & Zuppano, 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. & Zuppano, 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>.