Francesco Fabiano

Curriculum Vitae

Personal Information

Address	2420 S Espina St., Apt. #21, Las Cruces (NM), 88001, USA
Cell phone	(+1) 215-240-9225
Personal e-mail	fabianofrancesco.cs@gmail.com

Research Interests

Artificial Intelligence • Multi-agent Systems • Automated Planning • Hybrid AI Systems • 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 &
University of Udine, Udine, Italy & University of Parma, Parma, Italy &
New Mexico State University, Las Cruces (NM), USA

Advisors: Profs. Francesca Rossi and Agostino Dovier
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

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 LaTeX"*

Employers: University of Parma, Parma, Italy
Description: Structured and taught the undergraduate course *"Typing in LaTeX"*, 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 LaTeX. 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.

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.

Grants & Awards

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

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 LaTeX"	University of Parma	2022/2023
"Algorithms and Data Structures" (Teaching Assistant)	University of Udine	2020/2021

Conference Presentations

"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: the Notion of Trust"	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^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

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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 • AIIA, 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://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 (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.

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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 Weerdt, 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.

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September 18, 2024