Stefano Demarchi

Contact Information

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github.com/sdemarch

Employment and Experience

Università degli Studi di Genova
Post-Doc Researcher 2023 - Present
PhD student 2019 - 2022
Study and development of AI techniques for the formal verification of Neural Networks, part of the **NeVerTools** development team. Teaching support activities for an introductory course to Computer Science and Python programming.

Università degli Studi di Sassari | **Athena Sardegna**
Research Engineer 2018 - 2019
Development of a backend framework for a commercial platform (**PILOW**), research and design of optimization algorithms for logistics.

AI-Lift
R&D collaborator 2017 - 2019
Part of the development team of **LiftCreate**, a tool for the design of elevator systems enabled by AI techniques.

Education

Università degli Studi di Genova, Genova, IT
Ph.D in Computer Science, May 2023
Experimenting with Constraint Programming Techniques in AI: Automated System Design and Verification of Neural Networks
M.Sc. in Computer Engineering, October 2018
Product Configuration for Complex Systems: a case study in Computer-automated Design of Elevators
108/110

Universitè de Technologie de Compiègne, Compiègne, FR
European Master in Complex Systems in Interaction, September 2018
Double-degree program in collaboration with Università degli Studi di Genova
A, **mention**

Languages

Italian:	Mothertongue		
English:	Fluent	B1 (certificate)	C1 estimated
French:	Fluent	B1 (certificate)	C1 estimated

Programming and Software

Programming:	Python, Java, C++, C, MATLAB
Frameworks:	SPRING Java, VAADIN, PyQt5/6
Markup:	LaTeX, HTML5, CSS
Environments:	Microsoft Windows, Ubuntu Linux, Microsoft Office Suite, Visual Studio, IntelliJ IDEA, PyCharm, mySQL, GitHub

Publications

S. Demarchi, D. Guidotti, L. Pulina and A. Tacchella, *Supporting Standardization of Neural Networks Verification with VNN-LIB and CoCoNet*, in Workshop on Formal Methods for ML-Enabled Autonomous Systems, FoMLAS 2023, Paris, France, July 17-18, 2023.

S. Demarchi, *Experimenting with Constraint Programming Techniques in Artificial Intelligence: Automated System Design and Verification of Neural Networks*, PhD Thesis, 2023.

D. Guidotti, S. Demarchi, *Counter-Example Guided Abstract Refinement for Verification of Neural Networks*, in Cyber-Physical Systems Summer School workshop, CPSWS 2022, Pula, Italy, September 19, 2022, Proceedings, 2022.

S. Demarchi, D. Guidotti, A. Pitto and A. Tacchella, *Formal Verification of Neural Networks: a Case Study about Adaptive Cruise Control*, in International Conference on Modelling and Simulation, ECMS 2022, Aalesund, Norway, May 30th-June 3rd, 2022, Proceedings, 2022.

G. Cicala, S. Demarchi, M. Menapace, L. Annunziata and A. Tacchella, *A Comparison of Declarative AI Techniques for Computer Automated Design of Elevator Systems*, in Intelligenza Artificiale 16 (1), 131-150, 2022

S. Demarchi, M. Menapace and A. Tacchella, *Automated Design of Elevator Systems: Experimenting with Constraint-Based Approaches*, in International Conference of the Italian Association for Artificial Intelligence, AIxIA 2021, Online, Proceedings, 2022.

S. Demarchi, M. Menapace and A. Tacchella, *Automating Elevator Design with Satisfiability Modulo Theories*, in IEEE International Conference on Tools with Artificial Intelligence, ICTAI 2019, Portland, Oregon, November 4-6, 2019, Proceedings, 2019.

S. Demarchi, *Automated Design of Complex Systems with Constraint Programming Techniques*, in Cyber-Physical Systems Summer School workshop, CPSWS 2019, Alghero, Italy, September 23, 2019, Proceedings, 2019.

Honors and Awards

Best Paper award at the ECMS 2022 Conference

Best "Creative Lab Idea" award at the CPS 2022 Summer School