

PERSONAL INFORMATION **Andrea Gatti**

Date of birth 3 May 1998 | Nationality

WORK EXPERIENCE

October 2021 - July 2022 **Teaching Tutor**

Help Computer Science first-year students at the University of Genoa during *Introduzione alla Programmazione* and *Algoritmi e Strutture Dati* courses.

February 2022 - May 2022 **Teaching Tutor**

Help students of *Liceo Scientifico and Economico Sociale "Luigi Lanfranconi"* during the project 5GBot as a University tutor in collaboration with Ericsson.

February 2023 - May 2023 **Teaching Support**

Help Computer Science first and second-year students at the University of Genoa during course *Basi di Dati* and *Architetture dei Calcolatori* courses.

February 2023 - October 2023 **Research Fellow**

Project title: "Next Generation UPP: nuovi schemi collaborativi tra Università e uffici giudiziari Per il miglioramento dell'efficienza e delle Prestazioni della giustizia nell'Italia nord-ovest".

In this project, I am developing Natural Language Processing techniques for extracting master and statistical data from court judgments, particularly divorce judgments. For the realization of the project I am collaborating constructively with other assignees, exchanging ideas and results, and with a magistrate of the Court of Genoa who has expressed a very positive opinion on a preliminary version of my work running tests on 50 judgments. From the work done and the methods studied and implemented for data extraction, we are working on writing a paper that will compare the different approaches had between assignees and show the advantages of each solution to arrive at a synthesis that maximizes the quality of the final result.

November 2023 - Ongoing **PhD Student**

The goal of the proposed research is to design and develop a framework (namely VEsNA) for bridging intelligent software agents, virtual reality and natural language processing in a general purpose, scalable and flexible way. The framework should be able to interact with the user in natural language, understand commands given by the user, decide if "execute" it or not and in positive case find a way to achieve the goal giving at the end a feedback in natural language to the user. The intelligent software agents will be embodied in the virtual reality that will be their domain action. As a futuristic perspective, users could be able to enter the virtual reality and interact with the agents in a more natural way, in first place they will be able to see it from outside as spectators interacting with it using a chat.

October 2023 - December 2023 **Teaching Support**

Help Computer Science first year students at the University of Genoa during *Introduzione alla Programmazione* course and second-year master degree students during *Natural Language Processing* course.

February 2024 - June 2024 **Teaching Support**

Help Computer Science first year students at the University of Genoa during *Algoritmi e Strutture Dati* course.

WORKSHOPS, CONFERENCES AND SCHOOLS

July 24, 2022 **Second Workshop on Agents and Robots for reliable Engineered Autonomy (AREA)**

"This workshop aims to bring together researchers from the autonomous agents and the robotics communities, since combining knowledge from these two research areas may lead to innovative approaches that solve complex problems related to the verification and validation of autonomous robotic systems." (from <https://areaworkshop.github.io/AREA2022/>)

Speaker During the workshop I presented my first paper "Towards VEsNA, a Framework for Managing Virtual Environments via Natural Language Agents" [1].

September 1-2 2022 **23rd edition of the Workshop "From Objects to Agents" (WOA22)**

Local Organizer "The 23rd edition of the Workshop "From Objects to Agents" (WOA) was held in Genova to serve as a forum for researchers and practitioners working on all aspects of agents and multi-agent systems (MAS). Following the significant interest that all facets of Artificial Intelligence (AI) have been recently obtaining, the topic for WOA 2022 was *Emotional and Believable Human-Agent Interaction*" (from <https://sites.google.com/view/woa2022/home-page?authuser=0>).

I attended the workshop as local organizer (<https://sites.google.com/view/woa2022/committee>).

September 5-9, 2022 **16th International Conference on Logic Programming and Non-monotonic Reasoning (LPNMR)**

Local Organizer "LPNMR 2022 is the sixteenth in the series of international meetings on logic programming and non-monotonic reasoning. LPNMR is a forum for exchanging ideas on declarative logic programming, non-monotonic reasoning, and knowledge representation. The aim of the conference is to facilitate interactions between researchers and practitioners interested in the design and implementation of logic-based programming languages and database systems, and those working in knowledge representation and nonmonotonic reasoning. LPNMR strives to encompass theoretical and experimental studies that have led or will lead to advances in declarative programming and knowledge representation, as well as their use in practical applications. A Doctoral Consortium will also be a part of the program." (from <https://sites.google.com/view/lpnmr2022/home?authuser=0>)

I attended the workshop as local organizer.

May 31, 2023 **Computer Science Workshop 2023**

"The main focus of this workshop is research in Computer Science. In particular providing a grasp of what is the vast and complex world of computer science research to those that are familiar with it and also to those that are not." (from <https://dibris.unige.it/node/3263>)

July 17-21, 2023 **23rd European Agent Systems Summer School (EASSS)**

"The 23rd European Agent Systems Summer School was held at the Faculty of Information Technology of Czech Technical University in Prague in the Czech Republic from July 17th till 21st, 2023. The EASSS 2023 is organised under the auspices of EURAMAS, the European Association for Multi-Agent Systems." (from <https://easss23.pages.fit>)

September 13-15, 2023 **20th European Conference of Multi-Agents Systems**

"The 20th European Conference on Multi-Agent Systems (EUMAS 2023) will be located at the University of Naples (September 14-15th, 2023). EUMAS is the primary European forum for researchers interested in the theory and practice of autonomous agents and multi-agent systems. We are honoured to host the 20th edition of this conference in person, in Napoli, one of Europe's most stunning cities. EUMAS 2023 is an EURAMAS designated event which follows the tradition of previous editions, and aims to encourage and support activity in the research and development of multi-agent systems, in academic and industrial effort. EUMAS enables researchers to meet, present challenges, preliminary and mature research results in an open environment. EUMAS 2023 features formal proceedings published as part of the Lecture Notes in Computer Science (LNCS) series of Springer."

Speaker During the PhD day I presented the paper "Virtual Environments via Natural Language Agents"[2].

November 6-8, 2023 **24th Workshop "From Objects to Agents" (WOA23)**

The 24th edition of the Workshop "From Objects to Agents" (WOA) was held in Rome to serve as a forum for researchers and practitioners working on all aspects of agents and Multi-Agent Systems (MAS). Following the significant interest that all facets of Artificial Intelligence (AI) have been recently obtaining, the topic for WOA 2023 is "Cognition: an outdated goal or a permanent challenge for the new AI paradigm?".

November 6-9, 2023 **22nd International Conference of the Italian Association for Artificial Intelligence (AlxIA23)**

The 22nd International Conference of the Italian Association for Artificial Intelligence (AlxIA 2023) is organized by AlxIA (Associazione Italiana per l'Intelligenza Artificiale), which is a non-profit scientific society founded in 1988 and devoted to the promotion of Artificial Intelligence. The society aims to increase the public awareness of AI, encourage the teaching of it and promote research in the field.

Speaker I presented the paper "Mining Information from Legal Sentences in KlonDikE" [3] at the NL4AI workshop in the context of the AlxIA conference.

EDUCATION AND TRAINING

2020 – 2022 **Master Degree in Computer Science**

Università degli Studi di Genova
Via Dodecaneso 35, Genoa, Italy

Final Grade: 110/110 e lode

- Computational Vision (28/30)
- Computer Games (30/30)
- Computer Graphics and Augmented Reality (30L/30)
- Digital Signals and Image Processing (30L/30)
- Large-Scale Computing (30L/30)
- Machine Learning (27/30)
- Principle and Paradigms of Programming Languages (26)
- Data Visualization (30/30)
- Geometric Modeling (27/30)
- High Performance Computing (30L/30)
- Multiagents Systems (30L/30)
- Software Technologies for Human Computer Interaction (30L/30)

Master Thesis *To Be or not to Be... An agent in the theater?*

In this thesis I worked on a framework that integrates Dialogflow, JaCaMo and Unity in order to create a smart stage assistant at the head of an actors crew that follows the instructions given in natural language from the user. The user describes the scene and the movements of the actors and the crew puts it on stage, with a certain degree of freedom.

2017–2020 **Laurea Triennale in Informatica**

Università degli Studi di Genova
Via Dodecaneso 35, Genoa, Italy
Final grade: 110/110

Thesis *Testing Keras with NLP*

2013 – 2017 **Diploma di Maturità Classica**

Liceo Classico "Cristoforo Colombo"
Via Dino Bellucci 2, Genoa, Italy
Final grade: 83/100

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Cambridge English Level 1 Certificate in ESOL International (First)					

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

Communication skills

- team work: I have worked in various types of teams from tutoring teams to educational ones, in particular I worked as teaching tutor in a small group of 3 for one year, from 2017 to 2022 I have been in a team of educators of a local group of teenagers, from 2020 in a city-wide organizational group, from 2022 I am an organizer of a group of University students.
- mediating skills: in the experiences gained I have often had to and still have to work with younger and older people and I had to learn to listen and understand the reasons of both sides trying to find a synthesis.
- leadership skills: from 2022 I am one of the two vice presidents of Genoa's Azione Cattolica youth sector leading the corresponding equipe, for years I've been the leader of a group for organizing recreational activities for teenagers and elders and I've been the frontman of a music band (Cinque Quarti).
- speaking and writing skills: in most of the already mentioned activities I had and have to speak in public, both in organized speaks (meetings, formative events, etc) and in improvised ones. I made my first presentation at a scientific workshop on July 24th, 2022, to present the paper *Towards VEsNA, a Framework and Managing Virtual Environments via Natural Language Agents [VEsNA]* by Viviana Mascardi and Andrea Gatti at the AREA (Workshop on Agents and Robots for reliable Engineered Autonomy) (<https://areaworkshop.github.io/AREA2022/>) workshop affiliated to IJCAI (International Joint Conferences on Artificial Intelligence Organization) 2022 in Vienna (some papers will be invited for a special issue on the "Computers" journal).

Organisational / managerial skills

- I have been organizing weekly formative and playful activities for teenagers
- I have been organizing summer and winter camps at local and city level, trips and excursions
- I have been organizing formative events at city level for local educators
- I organized concerts, covering both relational and technical stuff.

Digital competences

SELF-ASSESSMENT				
Information Processing	Communication	Content creation	Safety	Problem solving
Proficient user	Independent user	Independent user	Independent user	Proficient user

[Digital competences - Self-assessment grid](#)

Computer skills – competent with most Microsoft Office programmes
– good programming skills in: C, C++, C#, Python, Java, Jason/JaCaMo, GDScript, Prolog
– basic programming skills in: MATLAB, Haskell, OCaml, HTML, JavaScript, Bash, PostgreSQL
– good skills with GNU/Linux

Other skills Writing songs and playing guitar, ukulele and harmonica, only some chord on piano. Love most kinds of music and in particular classical (I am a huge Tchaikovsky directed by Von Karajan fan), classic rock, singer-songwriters and indie. Climb mountains and ride mountain bike. I did swimming, tennis, basket and athletics. Following all sports particularly football, Formula1 and cycling. Reading lover of poems from ancient Greeks to nowadays and of books, particularly of Tolstoj and Dostoevskij.

Driving licence B

PUBLICATIONS

- [1] **Andrea Gatti** and Viviana Mascardi. “Towards VEsNA, a Framework for Managing Virtual Environments via Natural Language Agents”. In: *Proceedings of the Second Workshop on Agents and Robots for reliable Engineered Autonomy, AREA@IJCAI-ECAI 2022, Vienna, Austria, 24th July 2022*. Ed. by Rafael C. Cardoso, Angelo Ferrando, Fabio Papacchini, Mehrnoosh Askarpour, and Louise A. Dennis. Vol. 362. EPTCS. 2022, pp. 65–80. URL: <https://doi.org/10.4204/EPTCS.362.8>.
- [2] **Andrea Gatti**. “Virtual Environments via Natural Language Agents”. In: *Multi-Agent Systems - 20th European Conference, EUMAS 2023, Naples, Italy, September 14-15, 2023, Proceedings*. Ed. by Vadim Malvone and Aniello Murano. Vol. 14282. Lecture Notes in Computer Science. Springer, 2023, pp. 486–492. URL: https://doi.org/10.1007/978-3-031-43264-4%5C_36.
- [3] **Andrea Gatti**, Viviana Mascardi, and Domenico Pellegrini. “Mining Information From Legal Sentences in KlondikE”. In: *Proceedings of the Seventh Workshop on Natural Language for Artificial Intelligence (NL4AI 2023) co-located with 22th International Conference of the Italian Association for Artificial Intelligence (AlxIA 2023), Rome, Italy, November 6th-7th, 2023*. Ed. by Elisa Bassignana, Dominique Brunato, Marco Polignano, and Alan Ramponi. Vol. 3551. CEUR Workshop Proceedings. CEUR-WS.org, 2023. URL: <https://ceur-ws.org/Vol-3551/paper16.pdf>.
- [4] **Andrea Gatti** and Viviana Mascardi. “VEsNA, a Framework for Virtual Environments via Natural Language Agents and Its Application to Factory Automation”. In: *Robotics 12.2 (2023)*, p. 46. URL: <https://doi.org/10.3390/robotics12020046>.
- [5] Angelo Ferrando, **Andrea Gatti**, and Viviana Mascardi. “RV4Rasa: A Formalism-Agnostic Runtime Verification Framework for Verifying ChatBots in Rasa”. In: *Proceedings of the 6th International Workshop on Verification and Monitoring at Runtime Execution, VORTEX 2023, Seattle, WA, USA, 18 July 2023*. Ed. by Davide Ancona and Giorgio Audrito. ACM, 2023, pp. 1–8. URL: <https://doi.org/10.1145/3605159.3605855>.
- [6] Diana Ivan, Angelo Ferrando, **Andrea Gatti**, Giovanna Guerrini, and Viviana Mascardi. “Integrating Procedural Ontologies in VEsNA: Study, Requirements, and Preliminary Design”. In: *Proceedings of the 25th Workshop "From Objects to Agents", Bard (Aosta), Italy, July 8-10, 2024*. Ed. by Marco Alderighi, Matteo Baldoni, Cristina Baroglio, Roberto Micalizio, and Stefano Tedeschi. Vol. 3735. CEUR Workshop Proceedings. CEUR-WS.org, 2024, pp. 177–180. URL: https://ceur-ws.org/Vol-3735/paper%5C_14.pdf.
- [7] Angelo Ferrando, **Andrea Gatti**, and Viviana Mascardi. “Geometric and Spatial Reasoning in BDI Agents: A Survey”. In: *Proceedings of the 39th Italian Conference on Computational Logic, Rome, Italy, June 26-28, 2024*. Ed. by Emanuele De Angelis and Maurizio Proietti. Vol. 3733. CEUR Workshop Proceedings. CEUR-WS.org, 2024. URL: <https://ceur-ws.org/Vol-3733/paper1.pdf>.

- [8] Matteo Martini and **Andrea Gatti**. "Towards a Bomberman BDI experience in VR". In: *First Workshop on "eXtended Reality & Intelligent Agents" at ECAI*. Accepted, will be presented on 20th October. 2024.
- [9] **Andrea Gatti**. "Reason logically, move continuously". In: *4th Workshop on Agents and Robots for reliable Engineered Autonomy at ECAI*. Accepted, will be presented on 19th October. 2024.