



Tommaso Mencattini

PERSONAL PROFILE

I am a dedicated university student, who dreams of becoming a researcher. My passion for meta-knowledge, from epistemology to machine learning, is the driving factor behind my academic efforts.

EDUCATION

2021- present

VRIJE UNIVERSITEIT, AMSTERDAM

(Honours) Bachelor, Artificial Intelligence (average: 9.3/10):

- Intelligent System track
- Honours Programme (research track)
- Completed Exams:
 - *Introduction to Artificial Intelligence* (9.5/10)
 - *Computational Thinking* (9.0/10)
 - *Introduction to Psychology and its Methods* (8.5/10)
 - *Introduction to Programming, Python* (10/10)
 - *Intelligent Systems* (9.5/10)
 - *Project Intelligent Systems* (9.0/10)
 - *Logic and Sets* (9.5/10)
 - *Dynamic Modelling for Human-Centered Systems* (9.0/10)
 - *Linear Algebra* (8.5/10)
 - *Academic Writing* (9.0/10)
 - *History of Science* (10/10)
 - *Human-Computer Interaction* (10/10)
 - *Knowledge Representation on the Web* (9/10)

2018-2021

LA SAPIENZA UNIVERSITY, ROMA

Bachelor, Philosophy, 110 cum laude/110 (average: 29.2/30):

- Thesis on the impossibility of learning natural languages through formal rules (Kripke, Wittgenstein)

2013-2018

HIGH SCHOOL: LICEO ISACCO NEWTON, ROMA

Final exam (Esame di Stato): 95/100

WORK EXPERIENCE

2022- present

NETWORK INSTITUTE, AMSTERDAM

Technology Assistant at the Game Cella Lab:

-working with virtual reality environments, sensors, augmented reality, Unity, and C#:

- I developed a demo on Unity (C#) where the movement of a normal pencil was tracked through a motion capture system (OptiTrack, Motive) to reproduce the handwriting of a human user on a virtual GameObject
- I developed a demo where a human player, a pedestal, and a trophy were tracked through a motion capture system (OptiTrack, Motive) and an environment was built on Unity (C#) to simulate an award ceremony
- I have worked on implementing researchers' ideas through Unity, C#, Motive, and iClone
- I participated as organizer to the Surf XR-On-Tour, an event where cutting edge XR technology was introduced to the public

2022- present

ACADEMIC MERITS

INTELLIGENT SYSTEM COMPETITION, RANKED 1st

-ranked first in the competition of the course "Project Intelligent Systems", where students had to develop an intelligent system able to play the Austrian trick game Schnapsen against other students' bots:

- the bot was implemented in Python. The idea behind the bot was to improve the performance of a Monte-Carlo-Tree-Search bot (the agent that had achieved the best scores) by improving the accuracy of the predicted value of the possible moves without any relevant computational cost. This was achieved through the implementation of a neural classifier that predicts whether the Monte Carlo Value of a move is above a certain threshold. This classifier was used to filter the moves and increase the depth of the analysis of the not-filtered moves. On the basis of this trade-off between depth and breadth, a more reliable value was computed for each move, and more informed decisions were taken by the bot. The new bot improved the performance of the previous bot (significant results were documented in the final report) and it won all the matches of the tournament against the bots of the other students of the course.

KNOWLEDGE REPRESENTATION ON THE WEB, MSc AI:

- I have been invited to attend the research-oriented course "Knowledge Representation on the Web" from the curriculum of the MSc in AI offered by Vrije Universiteit. The course allowed students to develop a final project:

- I developed a knowledge base (RDF, RDFS, SPARQL and OWL) for a trash-picking robot able to process geospatial data (GeoSPARQL)
- I implemented on Python a cognitive model of the robot, which allowed to query and update the aforementioned knowledge base in order to extract and implement information about a simulated dynamic environment (the garden of the campus of the Vrije Universiteit)

- Despite being a 1st year student from the BSc, I received the second highest grade for the course (out of 40 students)

TECHNICAL SKILLS

Programming Languages

Python, C#, SPARQL

Libraries

scikit-learn, tensorflow, pandas, matplotlib, numpy, seaborn, RDFlib, SPARQLWrapper

Game Engine

Unity

Environments

Pycharm, VS community, Jupyter Notebook, Google Colab

OTHER SKILLS

Language

I have an IELTS certification (7 overall).

Music

I played violin for several years with the well-known conductor and violinist Massimo Pradella.