Prot. n. 0001539 del 16/10/2025 - [UOR: IMP000020 - Classif. V/5]

FEDERICO URBINI

EDUCATION

Sapienza University of Rome

Master in Artificial Intelligence and Robotics ***October 2024 – Present***

- *Relevant courses: Machine Learning, AI, Robotics, Deep Learning, Computer Vision, Reinforcement Learning*
- *Focus on AI algorithms, Robotics and Machine Learning application*
- Main Projects:
  - Developed the trajectory and orientation of a robot, enabling it to follow a predefined path and avoid obstacles through a laser scanner system.
  - Developed a Computer Vision framework for detecting unknown road obstacles using semantic segmentation and conformal prediction, with reliable uncertainty quantification.
  - Built a classifier to assess cultural specificity of items using both a fine-tuned BERT-like model and a custom Graph Neural Network leveraging multilingual Wikipedia features on a 3-class task (agnostic, representative, exclusive).

Bachelor in Management Engineering ***September 2021 – October 2024***

- Relevant courses: Operational research, Optimization, Automatic Control, Statistics, Corporate Finance
- Main Projects:
  - Built an operational research model, working with 300 variables, to manage the costs and maximize the outcome of the Marinero Company
  - Competed in "The Business Game", a project where students test themselves by solving economics and management problems such as human resources management, product sales in a competitive market and logistics
- Final Grade: **110/110**

Liceo Scientifico Camillo Cavour (RM) ***September 2016 – June 2021***

Cambridge section

- Went on a month-long study trip to both Exeter and Dublin where I had the opportunity to improve my fluency in English and meet people from all over the world.
- Experience as an Exchange student in Netherlands where a Dutch family hosted me for two weeks. I had the chance to learn their habits, culture and to attend the class of the Dutch high school.
- Completed an Excel and Statistics course led by a university professor as part of a PCTO program in high school. The course explored all the main features of Excel, including advanced data analysis, pivot tables, and statistical functions. Gained practical skills in applying Excel tools to solve real-world problems and analyze complex data sets.

Soft Skills: critical thinking, problem solving, teamwork, leadership, self-motivation, team management, networking, innovation, coding.

EXPERIENCE

Private Math and Physics lessons

Freelancer **September 2021 – Present**

- Create personalized lesson plans that break down difficult topics, using creative examples and strategies to make concepts easier to understand.
- Make the lesson as interactive as possible to keep students engaged and incorporate hands-on problem solving to help them see how math and physics apply in real-world situation.
- Track student progress consistently, adjusting methods dynamically to meet individual learning styles, resulting in improved academic performance and confidence in STEM subjects.

Software Robotics Engineer ***February 2025 –Present***

Member of GRASP team

Selected as one of five European teams by ESA Academy for the GRASP project (Gecko Rendezvous Autonomous System and Pincher):

- Developing the control software for a robotic arm designed to perform autonomous capture maneuvers in microgravity, using an adhesive end-effector inspired by the gecko's grip mechanism.
- Conducting a two-week test campaign at ESA's Orbital Lab to validate the robotic system in realistic microgravity conditions.

ACHIEVEMENTS

IGCSE Cambridge Exam ***May 2019***

- Completed the Cambridge IGCSE exam after extensive preparation, including numerous extra-curricular study hours. This dedication ensured a deep understanding of the material and confident exam performance.

Executor BLSD/PBLSD ***January 2024***

- Completed BLSD training and certified to use an automated external defibrillator (AED).

Volunteer ***June 2023 – Present***

- Volunteer collaborator at the Oratorio Regina degli Apostoli, working closely with Caritas. We organize frequent charitable events and I'm involved in daily activities with children, helping to create a joyful and educational environment for them

ADDITIONAL INFORMATIONS

Languages: Italian (Native), English (Fluent), Spanish (basic), German(basic).

IT Skills: Proficient in Microsoft Office (Word, Excel, PowerPoint), Canva, Phyton, Java, JavaScript, HTML, CSS, React Native, Typescript, SQL, AMPL, NetworkX, Pyomo, Notion, Latex, MatLab, C ++, Ros2.

Interests: Startup, AI, Robotics, Innovation, Computer Vision, Machine Learning, Football, Strategic Problem Solving.