





PERSONAL INFORMATION



Elena Umili

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WORK EXPERIENCE

15/10/2018–15/04/2019

MBZIRC master-internship at LAAS-CNRS

Antonio Franchi, Toulouse (France)

<https://www.laas.fr/public/>

Motion and Assembly Planning for Mixed Aerial-Ground Robotic Team for the MBZIRC 2020
Link to the MBZIRC robotic challenge: <http://www.mbzirc.com/challenge/2020>

- Project analysis
- Multi-agents planning
- Assembly planning
- Motion planning
- Task allocation
- Simulation framework developing in ROS + Gazebo
- C++ object oriented programming

Business or sector Artificial intelligence and robotics

01/06/2015–01/10/2015

Erasmus+ internship

Riccardo Auci, Barcelona (Spain)

<https://visivalab.com/>

Developing of a web-based 3D graphic application, for the Basilica Emilia preservation, in association with cultural heritage

- Project analysis
- javascript, PHP programming
- Creation of a MySQL relational database
- Use of web technologies: Ajax, JSON, HTML5, CSS
- Interactive graphic implementation using WebGL and three.js,
- Company web-site development
- Company portfolio compilation

Business or sector Information technology

EDUCATION AND TRAINING

01/10/2016–31/07/2019

Master of Science in Artificial Intelligence and Robotics

110 cum laude /110

Università degli studi di Roma La Sapienza, Roma (Italy)

Main subjects:

- Artificial intelligence
- Machine Learning
- Computer Vision
- Probabilistic Robotics
- Kinematic and dynamic control for both fixed and mobile robots
- Motion planning

Some projects:

- MPC-based visual corridor navigation for humanoids

- MPC-based visual corridor navigation for humanoids + Localization with particle filter
- Neural Image Captioning for Intelligent Vehicle-to-Passenger Communication
- Human motion primitive recognition with 3D convolutional neural network
- Reinforcement learning based artificial connect 4 player
- Intent Recognition in Human Robot Interaction using Linear Temporal Logic
- CNN-based hashtags prediction for Instagram images
- Locomotion and telepresence in virtual reality

Master Thesis: Planning for multiple UAVs in the MBZIRC challenge

25/07/2017–10/08/2017

Tohoku University Engineering Summer Program (TESP 2017)

Tohoku University, Sendai (Japan)

<https://www.tohoku.ac.jp/en/about/index.html>

Link to the university program: <http://www.astro.mech.tohoku.ac.jp/TESP/>

Main lectures arguments:

Field and Space Robotics, Rescue Robotics, Human-Robot Interaction, Robot Vision, Medical Robotics, Molecular-size Robotics.

Project developed during the laboratory activities:

Autonomous navigation with obstacle avoidance for a mobile robot

- main professor: Kazuya Yoshida
- description: the robot used was completely built and programmed by me and other TESP participants, starting from a LEGO Mindstorms NXT kit, a Kinect and a Raspberry Pi

01/10/2011–31/07/2016

Bachelor of Science in Engineering in Computer Science

108/110

Università degli studi di Roma La Sapienza, Roma (Italy)

- Mathematics, geometry, physics, electronics, linear systems
- Object-oriented programming, software design, software engineering, relational databases, operating systems, telecommunications networks, web programming, operational research

Bachelor Thesis: *Sviluppo di un ambiente grafico 3D, accessibile sul web, per la manipolazione di reperti architettonici*

(in english: Development of a 3D graphic environment, web-based, for the manipulation of architectural finds)

PERSONAL SKILLS

Mother tongue(s) Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Spanish	B2	B1	B1	B1	B1

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

- good communication skills
- I like to work in team and with people of other nationalities

Digital skills

SELF-ASSESSMENT

Information processing	Communication	Content creation	Safety	Problem-solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Digital skills - Self-assessment grid

- programming languages: C, C++, python, java, PHP, javascript
- data mining: MySQL, databricks, twython, beautiful soup
- machine learning: tensorflow, keras, scikit-learn
- parallel computing: CUDA
- computer vision: OpenCV
- robotics simulation and programming : ROS, V-REP, Gazebo
- web-programming: html5, CSS3, SQL, XML, JSON
- Interactive graphics: WebGL, three.js
- tools for software development: Git, Anaconda, Eclipse

Driving licence B