

Matteo Scucchia

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- EDUCATION**
- PhD in Computer Science and Engineering* Nov 2022 - Now
[University of Bologna](#), Cesena (FC), Italy
- Supervisor: [Prof. Davide Maltoni](#)
 - Co-supervisor: [Prof. Annalisa Franco](#)
 - Focus: SLAM, Loop closure detection, Deep Learning and Continual Learning
- M.Sc. Computer Science and Engineering* Sep 2019 - Mar 2022
[University of Bologna](#), Cesena (FC), Italy
- 110L / 110 - Magna cum Laude
 - GPA: 29.8 / 30
 - Thesis: Simultaneous Localization And Mapping for robots: an experimental analysis using ROS
 - Supervisor: [Prof. Davide Maltoni](#)
 - Focus: SLAM, odometry
 - Abstract summary: The field of robotics improved greatly in the past few decades, but how to make a mobile robot completely autonomous is still an unsolved problem. Create robots that can navigate an unknown environment, sensing the world through sensors and building a map of it is an important requirement and this particular problem takes the name of *Simultaneous Localization And Mapping* (SLAM). Theoretically, it can be considered solved, since several solutions are present in the literature and they perform sufficiently well under particular conditions, such as in a static and size-limited environment. But in the real world the environment changes, making the localization of the robot very uncertain. Therefore, in practice, long-term SLAM is still an open field of research.
- B.Sc. Computer Science and Engineering* Sep 2017 - Jul 2019
[University of Bologna](#), Cesena (FC), Italy
- 101 / 110
 - GPA: 26.56 / 30
 - Thesis: [Flutter, la nuova frontiera delle app platform-independent](#)
 - Supervisor: [Prof. Alessandro Ricci](#)
 - Focus: Flutter, mobile app
 - Abstract summary: The term "platform-independent" refers to programming languages, software application or hardware devices that work on different operating systems and platforms. In mobile computing, a platform-independent app is coded in a single language and can then run on multiple operating systems. The dissertation focuses on Flutter, a novel framework for writing platform-independent applications in the Dart programming language and deploying them on both Android and iOS.
- Scientific High School diploma* Sep 2011 - Jul 2016
[Liceo Scientifico Statale Fulcieri Paulucci di Calboli](#), Forlì (FC), Italy

- 100 / 100

PROFESSIONAL EXPERIENCE *Senior Professor* Jun 2022 - Jul 2022
Ragazze Digitali, Cesena (FC), Italy

- Summer camp for high school girls to learn how to create mobile applications using block programming and [Kodular](#).
- Supervisor: [Prof. Antonella Carbonaro](#)

Research contributor Mar 2022 - now
Machine Intelligence BioLab, Cesena (FC), Italy

- Robotic SLAM, machine learning, deep learning, biometrics and face morphing
- Supervisor: [Prof. Davide Maltoni](#)

Software Engineer Aug 2019 - Oct 2019
Bookmark s.r.l., Forli (FC), Italy

- Development of a mobile app for the Customer Relationship Management (CRM) of the company. The application was built using Flutter, a platform-independent application development framework.

Software Engineer Intern Feb 2019 - May 2019
Bookmark s.r.l., Forli (FC), Italy

- Development of a mobile app for the Customer Relationship Management (CRM) of the company. The application was built using Flutter, a platform-independent application development framework.

PROJECTS

DeepVO - (Jupyter notebook available [here](#))

- Implementation of Monocular and RGBD visual odometry using Deep Learning techniques and Tensorflow 2

CovidNN - (Code and report available [here](#))

- Segmentation and classification of X-RAY chest images to diagnose Covid-19 using Tensorflow 2 with a focus on the explainability of the results

GeneticDF - (Code and report available [here](#))

- Implementation of a simple Genetic Programming algorithm for data fitting using Scala

FOOL Compiler - (Code available [here](#))

- Implementation of a Functional Object-Oriented Language compiler using Java and ANTLR

More projects are available on my github profile [here](#).

CITIZENSHIP Italian

LANGUAGES Italian: native
English: C1

- **IELTS**, British Council: Band 7.0 - Good User, 23 Apr. 2022

SKILLS Programming languages

- Python, C++, Scala, Java, C, Javascript, Prolog, SQL, PHP, Dart

Machine learning libraries

- numpy, pandas, scikit-learn, pytorch, tensorflow

Robotic applications

- ROS1 (deep knowledge) and ROS2 (basic knowledge)

SLAM related libraries

- OpenCV, PCL, Open3D, Eigen3, Sophus, g2o, GTSAM

Language design

- ANTLR framework

Operating systems

- Linux (Ubuntu)
- Microsoft Windows

EXPERTISE

Mathematics

- Statistics, Algebra and Geometry, Optimization, Applied Mathematics, Discrete Mathematics, Calculus

Physics

- Kinematic, Thermodynamic (basic knowledge), Electromagnetism, Quantum Mechanics (basic knowledge)

Computer Science and Engineering

- Procedural Programming, Object-Oriented Programming, Functional Programming, Logic Programming, Concurrent Programming, Distributed Programming, Agent-based Programming, Design Patterns, Autonomous Systems, Pervasive Computing, Computer Vision, Internet of Things

Natural Science

- Biology, Chemistry, Bio-Chemistry, Earth Science

INTERESTS

Fitness, cinema, reading books, neurobiology, artificial intelligence, robotics, biology, genetics, chemistry, physics, natural history and evolution.

OTHER ACTIVITIES

Volunteer in the AGESCI boy scout association

- Boy scouts greatly improve the soft-skills of the individual and form the character
- 11 of the 12 moon-walkers in history were boy scouts.

REFERENCES

[Professor Davide Maltoni](#)

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[Professor Alessandro Ricci](#)

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