

# Andrea Gemelli

PH.D. STUDENT - MACHINE LEARNING SCIENTIST

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## Profile Summary

A Computer Science professional with 3+ years of experience, holding a MSc degree and actively pursuing a PhD in Machine Learning. Strong background in Graph Neural Networks, Document Analysis, and Natural Language Processing, highly interested and research-oriented towards language and vision and the latest trends on Large Language Models.

## Work Experience

### AI Lab - University of Florence

Florence, Italy

Ph.D. Student

Nov 2020 - ongoing

- Focused on the application of **Graph Neural Networks** to **Document Understanding** and **Natural Language Processing** related tasks.
- Worked as a visiting researcher at **Computer Vision Center** for a year.
- Attended several international conferences and summer schools: the **International Computer Vision Summer School (ICVSS)**, selected among 600+ applicants with 30% acceptance rate - the **Cambridge ELLIS Machine Learning Summer School**, selected among 260+ applicants with 50% acceptance rate - and the **4th IAPR Summer School on Document Analysis**, winning the 2<sup>nd</sup> price at the organized hackathon.
- Taught two university courses as a tutor, held several lectures, followed bachelor and master students in their projects and thesis.

### Alias2k

Montevarchi, Italy

Data Scientist

Apr 2018 - Sep 2018

- Developed machine learning based solutions to improve the effectiveness of company's softwares.
- Final work personally presented to the CEO of Avesco Rent in Lausanne.

## Education

### University of Florence

Florence, Italy

MSc in Computer Science and Engineering

2017 - 2020

- **Graduated with full marks** (110/110). Thesis: "Structural layout analysis of document images using Graph Convolutional Neural Networks"
- Conducted part of the thesis during an **Erasmus+ Traineeship** at **L3i lab of La Rochelle University**.
- Studied during an **Erasmus+ Study** at **Ghent University**. Passed Machine Learning, Software Hacking and Parallel Computing exams.

### University of Florence

Florence, Italy

Bachelor in Computer Science and Engineering

2014 - 2017

- Thesis: "Exploiting Convolutional Neural Networks for the detection of walls in floorplan images"

## Grants and Certifications

Jun 2023 **MLOps Certification**, Machine Learning Engineering for Production by DeepLearning.AI

Coursera

Feb 2023 **IAPR Research Scholarship**, awarded by the International Association of Pattern Recognition

IAPR

Feb 2023 **IRCDL Student Grant**, funded by Associazione Italiana per l'Intelligenza Artificiale

AIIA

Sep 2021 **Italian Bar Exam in Information Engineer**, with full marks (60/60)

UniFi

## Selected Publications

Complete list of publications in **Google Scholar** profile.

Doc2Graph: a Task Agnostic Document Understanding Framework based on Graph Neural Networks

**Andrea Gemelli**, Sanket Biswas, Enrico Civitelli, Josep Lladós, Simone Marinai

TiE @ ECCV22, October 23-27, 2022, Tel Aviv, Israel

Graph Neural Networks and Representation Embedding for Table Extraction in PDF Documents

**Andrea Gemelli**, Emanuele Vivoli, Simone Marinai

ICPR22, August 21-25, 2022, Montréal, Québec

Automatic generation of scientific papers for data augmentation in document layout analysis

Lorenzo Pisaneschi, **Andrea Gemelli**, Simone Marinai

Pattern Recognition Letters 167 (2022) pp. 38–44. 2022

## Languages

**Italian** (C2 - Mother Tongue) - **English** (C1 - Professional Proficiency) - **Spanish** (B1 - Intermediate Level)