Gabriele Berton

PhD Student in Computer Vision

g Google Scholar

GitHub

Personal Website

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PROFILE

Skilled researcher and developer, always ready to take on ambitious challenges. I'm constantly looking for innovative solutions to real-world problems, which leads me to simultaneously publish in the world's top conferences and solve complex tasks, while keeping an eye on technical constraints.

EMPLOYMENT & EDUCATION

Applied Scientist Intern | **Amazon Berlin** | May 2022 - Sep 2022
- Improving an existing action spotting pipeline in videos through multi-modal neural networks
- Analyzing video understanding and audio processing methods for a real-world application

PhD Student | Polytechnic of Turin | Nov 2021 – Present
- Developing a large-scale (1B+ images) retrieval software
- Publishing in top-tier conferences and journals
- Researching visual geo-localization methods
- Optimizing the accuracy and scalability of the retrieval software by means of semantic segmentation, classification, approximate nearest neighbor search and more.

Master thesis co-supervisor | Polytechnic of Turin | Jul 2020 – Present
- Efficient and scalable visual place recognition, Emanuele Munafò
- A Study on Deep Learning Approaches for Visual Geo-localization, Riccardo Mereu
- Deep learning for Sequence-based Visual Geo-localization, Gabriele Trivigno

Applied Scientist | Italian Institute of Technology & Polytechnic of Turin | Apr 2020 – Oct 2021
- Research and development on large scale geo-localization software through deep neural networks
- Publishing in top-tier conferences

Bachelor and Master degree in Software engineering | Polytechnic of Turin | 2014 – 2020

Software Engineer | Consoft Sistemi | Dec 2017 – Dec 2018
- Full-time job as full-stack software engineer, working in large (20+) and small teams
- Building software based on the MVC framework, using Java, SQL, Angular and more
- In the last months of this job I led the creation of a software for the aerospace company Avio

SELECTED PUBLICATIONS (FIRST AUTHOR AT TOP CONFERENCES)

- Deep Visual Geo-localization Benchmark
  G. Berton, R. Mereu, G. Trivigno, C. Masone, G. Csurka, T. Sattler, B. Caputo
  In proceedings of **CVPR 2022 (Oral)**
- Rethinking Visual Geo-localization for Large-Scale Applications
  G. Berton, C. Masone, B. Caputo
  In proceedings of **CVPR 2022** (Poster)
- Viewpoint Invariant Dense Matching for Visual Geolocalization (Poster)
  G. Berton, C. Masone, V. Paolicelli, B. Caputo
  In proceedings of **ICCV 2021**
- Adaptive-Attentive Geolocalization from few queries: a hybrid approach (Poster)

G. Berton, V. Paolicelli, C. Masone, B. Caputo
In proceedings of **WACV 2021**

PROGRAMMING LANGUAGES AND TECH SKILLS

- Excellent knowledge of: Python, PyTorch, FAISS, scikit-image, openCV, Git, Visual Geo-localization, Image Retrieval, Object Detection, Image Classification
- Advanced knowledge of: Image Segmentation, Text Detection and Recognition, Unsupervised Video Depth Estimation, MySQL, Java, Java Spring

LANGUAGES

- English C2
- Italian native
- Spanish C1
- Chinese B1 (HSK level 4/6 in 2012)

OTHER EXPERIENCES AND SKILLS

- I am part of RoboTo, a university team with which I take part at international robotics competitions, through which I've learn to **integrate computer vision methods into robots**.
- I'm a **Python enthusiast**. Since I got to know Python I use it for everything: video editing, web scraping, telegram bots.
- I'm a **math-oriented** person: in my youth I won numerous math competitions, and in high school I reached the finals of the Italian National Olympics of Mathematics both individually and with my high school team.
- I'm an **avid traveler** (been to 40+ countries): I spent one year of high school in China through AFS, after which I took a gap year, working six months in Australian plantations and then traveling from Thailand to Italy without flights. These adventures gave me **confidence**, **curiosity** and **self-motivation**.
- I played football for more than 15 years, many of which I spent as captain of my team. This experience taught me about **teamwork** and **leadership**.
- I have been a soccer referee for three years, during which I've learned to **autonomously take quick decisions under pressure**.
- I've managed the rental of a summer holiday home for three years in my hometown. From this I have learned the basics of **entrepreneurship** and dealing with customers.
- During my last year of high school I was elected as one of four student government presidents. During this year, I had the chance to practice my **leadership** and **public speaking** skills.
- After volunteering as an English teacher at the Fantasy Camp in Belarus in 2016, I became their HR recruiter, and I was in charge of recruiting 60 international English teachers for the summer. I conducted hundreds of interviews, and I assisted the candidates with travel and visa requirements. This experience improved my **organizational** and **scheduling** skills.