Florence, Italy
Media Integration and Communication Center
☐ (+39) 370 1222 374
✉ a_baldrati@hotmail.it
🌐 abaldrati.github.io
in Alberto Baldrati
✆ Alberto Baldrati
○ ABaldrati

Alberto Baldrati

PhD Student

▬▬▬ Education

2021 - present **PhD in Artificial Intelligence & Computer Vision**, *University of Pisa/University of Florence - Media Integration and Communication Center (MICC)*, Pisa/Florence, Italy
Topics of research: Composed Image Retrieval, Vision-Language Models, Fashion Image Generation

2019 - 2021 **M.Sc in Computer Science and Engineering**, *University of Florence*, Florence, Italy, Grade: 110/110 cum laude
Thesis: Deep Learning techniques for image retrieval using joint textual and visual encoders

2016 - 2019 **B.Sc in Computer Science and Engineering**, *University of Florence*, Florence, Italy, Grade: 110/110 cum laude
Thesis: Video recognition of soccer actions using recurrent neural network

---
▬▬▬ Publications

2023 Davide Morelli*, Alberto Baldrati*, Giuseppe Cartella, Marcella Cornia, Marco Bertini, and Rita Cucchiara. LaDI-VTON: Latent Diffusion Textual-Inversion Enhanced Virtual Try-On. In *Proceedings of the ACM International Conference on Multimedia (ACM MM)*, 2023.

2023 Alberto Baldrati*, Davide Morelli*, Giuseppe Cartella, Marcella Cornia, Marco Bertini, and Rita Cucchiara. Multimodal Garment Designer: Human-Centric Latent Diffusion Models for Fashion Image Editing. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 2023.

2023 Alberto Baldrati, Marco Bertini, Tiberio Uricchio, and Alberto Del Bimbo. Composed Image Retrieval using Contrastive Learning and Task-oriented CLIP-based Features. *ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMM)*, 2023.

2023 Alberto Baldrati*, Lorenzo Agnolucci*, Marco Bertini, and Alberto Del Bimbo. Zero-Shot Composed Image Retrieval with Textual Inversion. In *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV)*, 2023.

2023 Lorenzo Agnolucci*, Alberto Baldrati*, Francesco Todino, Federico Becattini, Marco Bertini, and Alberto Del Bimbo. ECO: Ensembling Context Optimization for Vision-Language Models. In *Proceedings of the IEEE/CVF International Conference on Computer Vision Workshop (ICCVW)*, 2023.

2022 Alberto Baldrati, Marco Bertini, Tiberio Uricchio, and Alberto Del Bimbo. Effective Conditioned and Composed Image Retrieval Combining CLIP-Based Features. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (Demo)*, 2022.

2022 Alberto Baldrati, Marco Bertini, Tiberio Uricchio, and Alberto Del Bimbo. Conditioned and Composed Image Retrieval Combining and Partially Fine-Tuning CLIP-Based Features. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (CVPRW)*, 2022.

A comprehensive and up-to-date publication list is accessible on my Google Scholar profile.

Projects

2021   *MT-BERT* - **Multi-Task Deep Neural Networks for Natural Language Understanding**
Implement a neural language understanding model employing a Multi-Task Deep Neural Network. The model learns representations across multiple NLU tasks by utilizing BERT, a bi-directional transformer language model, as the base encoder.

2021   *BrainAugment*: **Enhancing EEG Data through Data Augmentation Techniques**
Conducted an in-depth investigation into advanced data augmentation methodologies tailored for convolutional neural network (CNN) classification models, specifically applied to the domain of EEG data.

2019   **Video Recognition of Soccer Actions using Recurrent Neural Networks**
Python and Keras-based Bachelor's thesis project focused on training a neural network to accurately identify key soccer actions such as goals, substitutions, and cards within comprehensive match videos.

Most of the projects (in addition to others not mentioned here) are available on my Github profile.

Technical skills

Programming Languages

- Python
- Java
- C
- C++
- Javascript
- SQL

Machine Learning Technologies

- PyTorch
- TensorFlow
- Keras
- Scikit-learn
- OpenCV
- Pandas

Misc

- Git
- Weights & Biases
- NumPy
- SciPy
- Jupyter
- Matplotlib

Languages

Italian, Native language

English, B2 level, Cambridge Assessment English - First Certificate in English

Achievements

2022   **CVPR 2022 Best Demo Honorable Mention**, *Computer Vision and Pattern Recognition (CVPR) Conference*
We received a CVPR 2022 Best Demo Honorable Mention with our work "Effective and composed image retrieval combining CLIP-based features".

Other

2016   **First level instructor of Tennis, Padel and Beach Tennis**, *FIT (Federazione Italiana Tennis)*
Training course for the first-level Tennis/Paddle/Beach Tennis instructor. This course included a classroom training of 48 hours, an internship to be carried out at a club associated with the FIT, and finally a theoretical and practical examination.

2022   **Italian state professional information engineer examination**, *University of Florence*
Professional examination prescribed by Italian laws to become a professional engineer

(Last updated: October 2023)