AI for fashion - Introduction

Lorenzo Stacchio

PhD student in Computer Science

Department for Life Quality studies

Introductory class

- Instructors
- Course organization
- Final project

Academic ten/quarter both at the end of the class

Main Instructor

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

VARLAB: VIRTUAL AND AUGMENTED REALITY LAB

Random stuff lover

CV breve

- **2° year PhD student in CS;**
- **Master Degree in CS;**
- **Bachelor Degree in CS;**

Aree di ricerca

- **Machine and Deep Learning;**
- **Computer Vision;**
- **Augmented Reality;**

Contatti

Scientific Activity

Cultural Heritage

- Stacchio, L., Angeli, A., Lisanti, G., Calanca, D., & Marfia, G. (2022). Towards a holistic approach to the socio-historical analysis of vernacular photos. ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM).
- Stacchio, L., Angeli, A., Hajahmadi, S., & Marfia, G. (2021, October). Revive Family Photo Albums through a Collaborative Environment Exploiting the HoloLens 2. In *2021 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* (pp. 378-383). IEEE;
- Stacchio, L., Hajahmadi, S., & Marfia, G. (2021, March). Preserving Family Album Photos with the HoloLens 2. In *2021 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (pp. 643-644). IEEE.

Fashion (strictly speaking)

- Morotti, E., Stacchio, L., Donatiello, L., Roccetti, M., Tarabelli, J., & Marfia, G. (2021). Exploiting fashion x-commerce through the empowerment of voice in the fashion virtual reality arena. *Virtual Reality*, 1-14.;

Additional Instructors

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VARLAB: VIRTUAL AND AUGMENTED REALITY LAB

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Course organization

- Approximately **five weeks (26/30 hours)** where we will busy depicting:
    - The scenario we are moving in;
    - Provide knowledge about all the modern applications of AI for fashion;
    - Fundamentals of Machine Learning and programming to understand how those applications are built;
    - Doing some little projects;
- Then, coronavirus and LAB occupation permitting, we can do a visit in our VARLAB (Rimini or Bologna) to:
    - Test some Extended Reality (XR) devices, used to empower AI for fashion;
    - Gain some experiences to support your work/research in future.

Course schedule

- Monday 14-18 p.m.* --> theoretical and practical sessions;
- Tuesday 15-17 --> mostly theoretical;
- In general, we will finish a quarter before the end of the session;

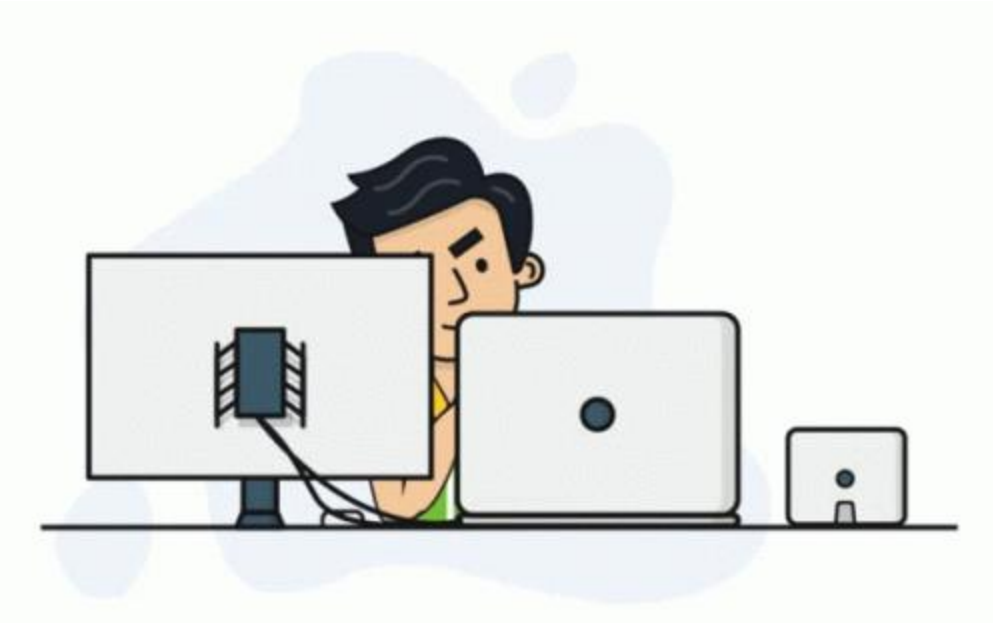
* Many breaks = be happy

Course outline

- Introduction to artificial intelligence for fashion;
- Principles: Python programming;
- Principles: Data analysis and visualization;
- Principles: Machine Learning;
- Principles: Deep learning;
- Orange: a platform for data analysis and machine learning with no code;
- Use cases of artificial intelligence in fashion;
- Lab sessions;

How to strike this course

- **You must follow at least 24/30 hours;**
- **Doing all the practical lab sessions;**
- **Final project**



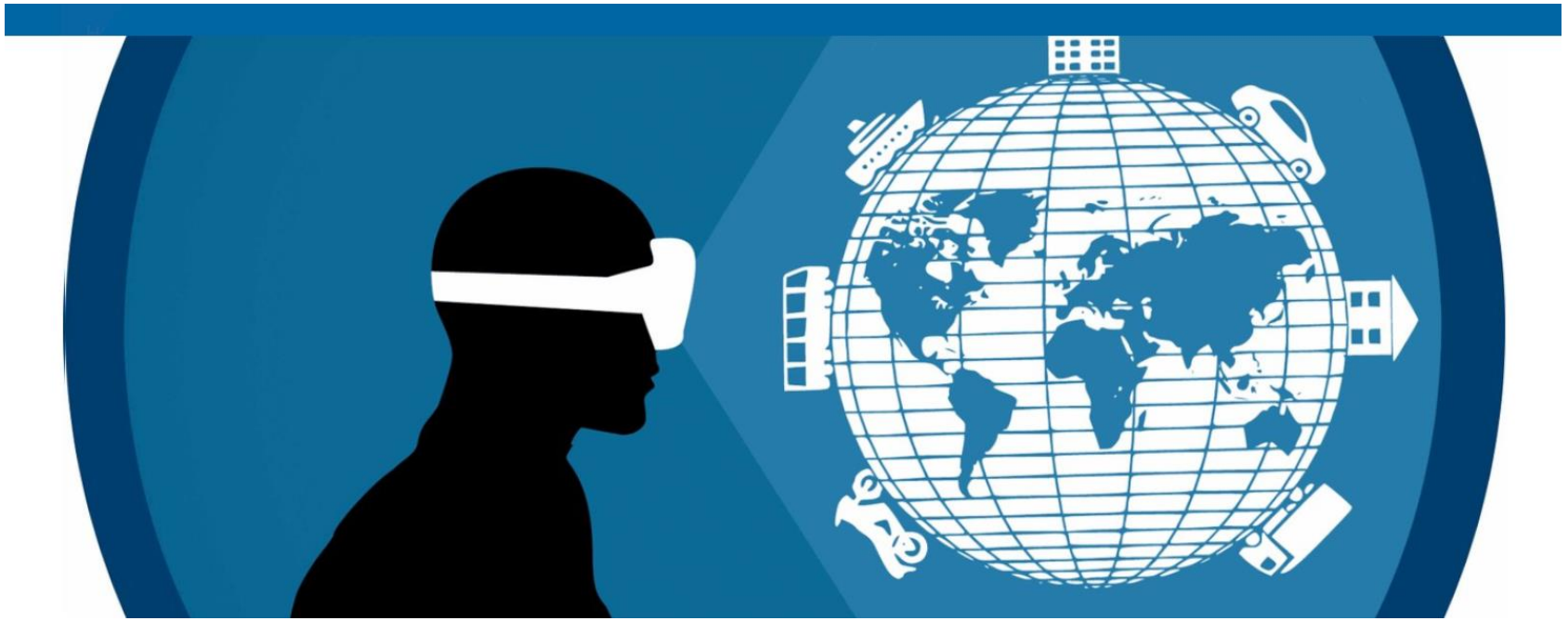
Office hours

Write me an e-mail and we will set an appointment via Teams!

Textbooks and sources

- Textbooks:
    - Luce, L. (2018). *Artificial intelligence for fashion: How AI is revolutionizing the fashion industry*. Apress;
    - McKinney, W. (2012). *Python for data analysis: Data wrangling with Pandas, NumPy, and IPython*. " O'Reilly Media, Inc.".
- Interesting preliminary lectures:
    - Gong, W., & Khalid, L. (2021). Aesthetics, Personalization and Recommendation: A survey on Deep Learning in Fashion. arXiv preprint arXiv:2101.08301.
    - Cheng, W. H., Song, S., Chen, C. Y., Hidayati, S. C., & Liu, J. (2021). Fashion meets computer vision: A survey. ACM Computing Surveys (CSUR), 54(4), 1-41.

VARLAB: Virtual and Augmented Reality Lab



The VARLAB laboratory is the result of an ongoing collaboration between the Department for Life Quality Studies, Department of Arts and the Department of Computer Science and Engineering aiming at designing and building distributed and immersive environments to experiment with virtual reality and augmented reality applications.

The lab has been funded by the University of Bologna, under the AlmaAttrezzature 2017 initiative.

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VARLAB: resources

- We possess state of the art XR devices and state of the art tools able to support XR applications development:
    - ARTEC EVA 3D scanner;
    - Instao360 pro 2;
    - HTC Vive Pro Eye(Virtual Reality device);
    - Microsoft Hololens 2 (Augmented Reality device);
- The lab has been funded by the University of Bologna, under the AlmaAttrezzature 2017 initiative.
- The principal research themes considered by the VARLAB are:
    - AI and Extended reality application in Fashion;
    - AI and Extended reality application in Cultural Heritage;
    - Ai and Extended reality in Education;

Other VARLAB members

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