

# Adrien Vandekerckhove

Master's Student in Artificial Intelligence & Data Analytics

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 Belgium



## Education

2022-2024 **Master's Degree in Computer Science**, *Umons*, Belgium  
Specializing in Artificial Intelligence & Data Analytics.

2019-2022 **Bachelor's Degree in Computer Science**, *Umons*, Belgium

## University Projects

### Video Editing with Natural Language *UMONS*

October 2022 - (Ongoing)

- Used **Python** and **OpenCV** to extract meaningful frames from videos.
- Indexed the frames into an **SQLite** database with their timestamps and **CLIP** embeddings.
- Compared the user's requests with the frames using the multimodal text/image nature of **CLIP**.
- Retrieved the best matching frames to assemble a new video based on the user's text requests.
- Currently working on an interface for ease of use.

### Multi-Object Tracking *UMONS*

October 2022 - December 2022

- Used **Deep Sort** with the **MMTracking** library to detect multiple people in a video.
- Extracted key features from the bounding boxes with **Python** and **Pandas**.
- Detected people crossing specific regions.
- Identified abnormal behavior with a kernel density estimation over time periods of 1/5/20 seconds and displayed the outliers of those distributions with **Seaborn** and **Pandas**.
- Reconstructed a new video with **OpenCV**.

## Experience

### Automated product searching and showcase

August 2021 - September 2022

*Worked as a student entrepreneur from 2021 to 2022 in parallel with my studies for a personal project.*

- Used **Python** to find good products with great discounts on the web.
- Stored those products in an **SQLite** database structured by product categories.
- Developed a **Django** app to manage the products in an admin dashboard.
- Created procedural videos to showcase the products from the product image and description with **Python** and **Blender**.
- Deployed the code for making procedural videos in **Docker** containers on **GCP** with **Cloud Run** and a **Flask** server.

## Technical Skills

- **Programming Languages:** Python, Java, SQL.
- **Data Science Libraries:** OpenCV, PyTorch, Pandas, NumPy, Matplotlib, Seaborn
- **Backend Frameworks:** Django, Flask.
- **Tools:** Git, Linux, Docker, GCP (Cloud Run).