AI AND SUSTAINABILITY IN VET EDUCATION

CAPACITY TRAINING FOR VET TEACHERS IN ATHENS,GREECE

AI-SAVES: ARTIFICIAL INTELLIGENCE AND SUSTAINABLE AUTOMATED VISION FOR ENVIRONMENTAL SOLUTIONS IN VET EDUCATION1
8-22.11.2024

The Erasmus project titled "AI & Sustainability in VET Education," hosted by DDE B Athens from November 18 to 22, 2024, commenced with an opening speech delivered by the School Principal, Mr. Balaskos Athanasios. In his remarks, Mr. Athanasios emphasized the significance of Erasmus projects in bringing together diverse cultures while highlighting the importance of Artificial Intelligence and Sustainability in Vocational Education.

Following the opening speech by the School Principal, Mr. Balaskos Athanasios, Dimos Kouloumpis and Konstantinos Kiousis welcomed the guests to Athens and provided an overview of the project's agenda. In his remarks, Dimos Kouloumpis stated, "These training sessions in Athens will be a productive process aimed at contributing to sustainability in the field of artificial intelligence within schools."

On the first day of the project, two distinct activities were conducted:

Activity 1: Kristina Sutiene and Liepa Bikulciene from Kauno Technologijos Universitetas delivered a presentation on Deep Learning Models, with a particular focus on CNN (Convolutional Neural Networks) layers and architectures. Additionally, Fatima Pais and Luis Conceiçao introduced the concepts and fundamental applications of Image Processing.

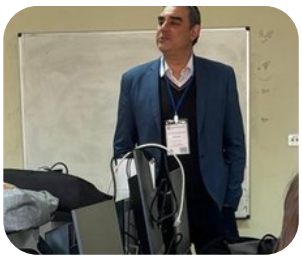
Activity 2: Led by Fatima Pais, practical sessions commenced on Classification, Object Detection, Segmentation, and Transfer Learning Models. Furthermore, the topics of Evaluation Metrics, Classification, and Object Detection were examined in detail.

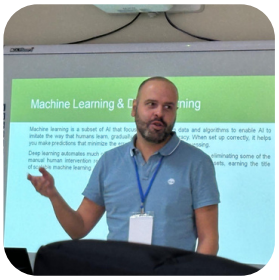
COORDINATOR

***KAUNAS TECHNOLOGY UNIVERSITY**

PARTNERS

- DDE B Athens
- Polytechnic School TXORIERRI S.COOP
- Darica District National Education Directorate
- Mihajlo Pupin High School, Skopje, North Macedonia (Secondary Education in Electrical Engineering)
- European Association for Vocational Education
- Sucossor Criativos, Lda
- Porto Polytechnic Institute
-
-





Co-funded by the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

AI AND SUSTAINABILITY IN VET EDUCATION

CAPACITY TRAINING IN ATHENS GREECE

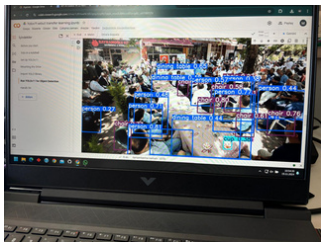
During the sessions on the second day, Fatima Pais focused on pre-trained models, specifically MobileNet (classification) and YOLO (object detection). The Google Colab platform was introduced as a tool for running machine learning and artificial intelligence models online. It was explained that Python code can be written and executed on Google Colab without the need to install any software locally.

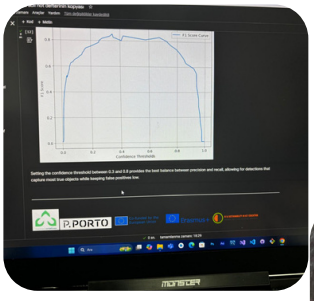
During the practical session, applications utilizing the YOLO library were demonstrated, both with and without transfer learning. In the same session, Fatima Pais provided a detailed explanation of fundamental image processing concepts and established the necessary working environment for the applications.

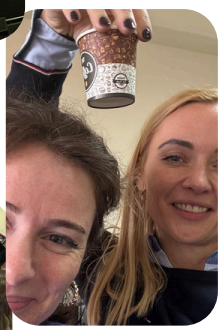
In the subsequent session, image classification applications were carried out using the MobileNet library.

On the third day,
the sessions continued with Image Processing applications using the YOLO and MobileNet libraries, both with and without transfer learning. During image classification with transfer learning, evaluation metrics such as IoU and mAP were utilized.

Following the activities, a city tour commenced under the guidance of Konstantinos Kiousis. We extend our heartfelt gratitude to Konstantinos for his contributions and hospitality.







A cultural activity was conducted with a tour of the Old City and a museum visit, guided by our tour leader.

Co-funded by the European Union

This project has been funded with the support of the European Commission. This communication reflects the views of the author only, and the Commission cannot be held responsible for any use that may be made of the information contained therein.

The fourth day began with a presentation by Professor Goreti on "Generative Input/Output and Bias and Fairness in Artificial Intelligence." Following this, under the guidance of Fatima Pais and Luis Conceiçao, integrated applications were conducted by combining all the libraries learned in previous sessions.

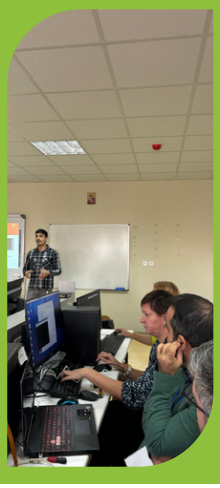
Practical Project:

A Raspberry Pi model was set up, and applications were carried out using the YOLO and MobileNet libraries, both with and without transfer learning.

Images were collected, trained, and the model was saved.

The developed model was evaluated using metrics such as IoU (Intersection over Union) and mAP (Mean Average Precision).

Finally, a detailed training session was conducted by Professor Paulo Matos and Filipe Santos on the use of Git version control system and the GitHub platform.



Evaluation and Follow up

Day 5:
Evaluation and Follow up :
The evaluation and monitoring of the activities and applications conducted throughout the training have been carried out.

Certificate Ceremony

Co-funded by the European Union

This project has been funded with the support of the European Commission. This communication reflects the views of the author only, and the Commission cannot be held responsible for any use that may be made of the information contained therein.

Cultural Activities of the AIVET Group






Follow us to learn more!

@AI SUSTAINABILITY IN VET

@partnersaivet

@Optiman

Co-funded by the European Union

This project has been funded with the support of the European Commission. This communication reflects the views of the author only, and the Commission cannot be held responsible for any use that may be made of the information contained therein..