

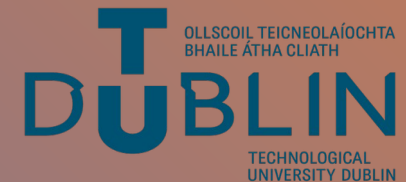
hcaim

human centred
artificial intelligence
masters

Ethicon | April 20, 2023



UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II



Overview:



human centred
artificial intelligence
masters

Keynotes

Two 30 minute
presentations

HCAIM Overview

One hour

Human Challenge

Three hours



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ETHICON PLANNING

Part 1

- An introduction to CNNs.
- This is delivered using Google Teachable Machine.
- This is a introductory overview of the process and how models make predictions.
- Model bias will be shown.
- The data set will be presented.

Part 2

- The students will be introduced to the concept of an API, and a production model (using Docker).
- The model will be hosted in an API, and sample code will be provided to demonstrate how to query the model.
- The Ethicon problem will be introduced, and the Ethicon begins.

Part 3

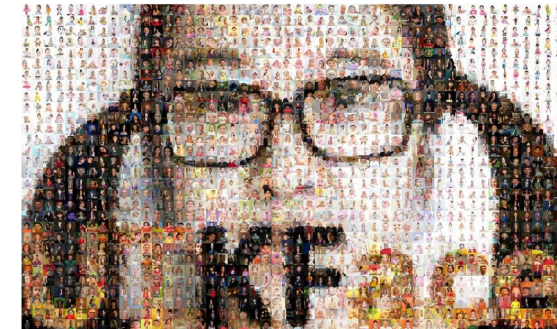
- The students work in teams to work on the Ethicon problem.
- The students have to present their findings (10 minute presentation each) in a closed session with judges.
- Winners announced.



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- This is delivered using Google's Teachable Machine.
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Part 1 (Introduction to CNNs) [30 minutes]:

- Introduction to how CNNs predict objects
 - Kernels, feature maps, dense layers
- The UTKFace dataset will be used
 - <https://susanqq.github.io/UTKFace/>
 - The students will be shown the labelled data: Age, Gender & Race
- Examples using the teachable machine
 - <https://teachablemachine.withgoogle.com/train/image>
 - Model bias (using a class imbalance will be shown)



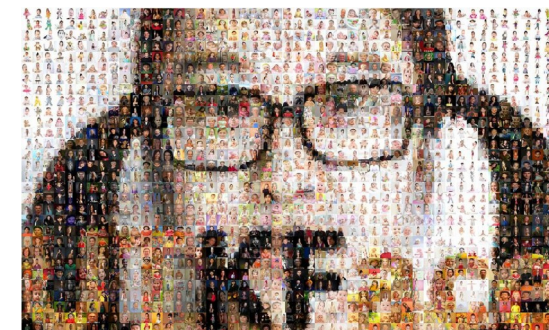


Part 2

- The students will be introduced to the concept of an API, and a production model (using Docker).
- The model will be hosted in an API, and sample code will be provided to demonstrate how to query the model.
- The Ethicon problem will be introduced, and the Ethicon begins.

Part 2 (The Problem) [30 minutes]:

- Introduction to Organisational AI [20 minutes]:
 - An overview of Docker and TFS
 - The Idea behind a Restful API and using TFS
 - Example of querying a live API
<https://github.com/KeithQuille-TUDublin/EthiconOrgAI>
- The Ethicon task:
 - A model will be developed and served from a public IP address
 - The students will not know the bias (if any associated with it)
 - The students will have to select images from the dataset, and query the API to find biases for certain target groups:
 - Age, Gender and Race
 - The careful selection and testing of the live system to identify bias is the goal of the ethicon



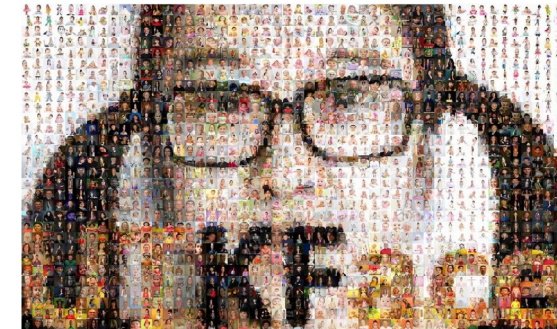


Part 3

- The students work in teams to work on the Ethicon problem.
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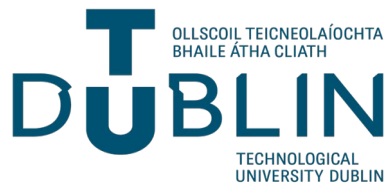
Part 3 (Ethicon) [120 minutes]:

- The students will attempt to investigate the production model
 - The code allows for one query at a time, this can be done in parallel by students or students can adapt the code provided to iteratively solve the problem using loops as the images are labelled as `[age]_[gender]_[race]_[date&time].jpg`
- The students will develop a 5 minute presentation outlining:
 - How they planned and implemented a systematic investigation of target groups for bias
 - Any results they found
 - Conclusions regarding the API





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AI ETHICON

Join us for an immersive learning experience with experts and industry leaders at the intersection of AI and ethics!

- Part 1. CNNs Object Predictions. An Introduction
- Part 2. Organizational AI. An Introduction.
- Part 3. The Challenge.

APRIL 20, 2023



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www.humancentered-ai.eu