

# Human Factors (HF) in Artificial Intelligence (AI)

Introduction and objectives

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Studying human (body, behaviors, reactions and cognition) with technology

# Human factors (HF)

Human factor is a multi-disciplinary field at the intersection between:

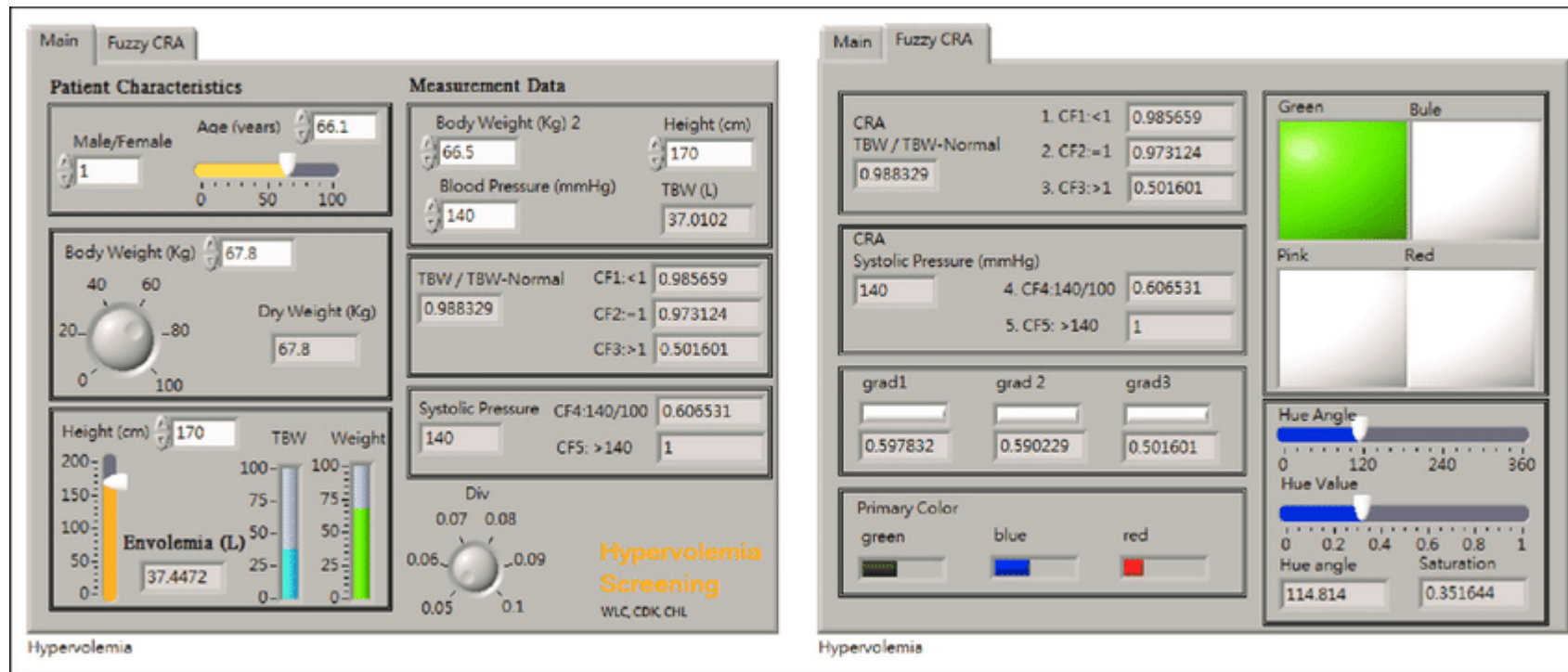
- Ergonomics, Psychology, Physiology
- Human Machine Interaction
- Complex systems (e.g. intelligent systems)
- ...

The HF goal is to take into account the human in the design of systems to understand and minimize errors.

# Why in computer science studies ?

You are trained to create complex systems:

- Scientific applications



Chen, Wei-Ling & Kan, Chung-Dann & Lin, Chia-Hung & Chen, Ying-Shin & Mai, Yi-Chen. (2017).

Hypervolemia screening in predialysis healthcare for hemodialysis patients using fuzzy color reason analysis. International Journal of Distributed Sensor Networks. 13.

- Artificial intelligence

# Objectives

To understand that knowledge about humans is fundamental for the design of systems

More specifically, you will be able to:

- explain why human and machines can fail
- list three challenges that AI have to face because of human factors
- develop user-centered assessments

To understand how artificial intelligence can gather knowledge about humans (or a given user):

More specifically, you will be able to:

- design experiments for human recordings
- train and evaluate machine learning models on human data
- cope with common challenges in AI for human data

# Evaluation

## Practical

- Given on the 4<sup>th</sup> of March
- Questions and answers on the 10<sup>th</sup> of March
- To be returned by 16<sup>th</sup> of May (midnight)

March

## Exam

- Multiple choices questions (Moodle quizz on-site)
- 5 minutes to answer 3 questions with explanations

$$Final\ grade = \frac{1}{3}Practical + \frac{2}{3}Exam$$