

# CIMNE<sup>R</sup>

EXCELENCIA  
SEVERO  
OCHOA



## Gecko

Design for IGA-type  
discretization workflows



Funded by the  
European Union



## 3<sup>rd</sup> GECKO Meeting

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### DC3 – Personal Presentation

Andrea Gorgi  
agorgi@cimne.upc.edu  
10/11/2023

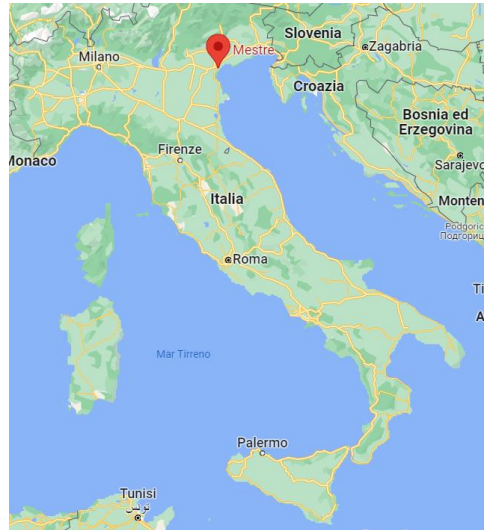




# Me before IGA

## Personal details

- Andrea Gorgi
- 24 years old
- From Mestre-Venice



## Hobbies/Interests

- Animation / voluntary activities
- Sports of any type



# Me before IGA - academic background



- Scientific High School (Mestre, 2012-2017)



*Liceo Ugo Morin (Mestre)*





# Me before IGA - academic background



- Scientific High School (Mestre, 2012-2017)
- BACHELOR - Aerospace Engineering (Padova 2017-2020)



*Industrial Engineering - University of Padova*



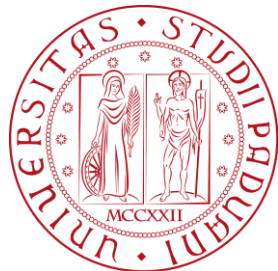
# Me before IGA - academic background



- Scientific High School (Mestre, 2012-2017)
- BACHELOR - Aerospace Engineering (Padova 2017-2020)
- MASTER- Mathematical Engineering (Padova, 2020-2023)



*Civil Engineering - University of Padova*



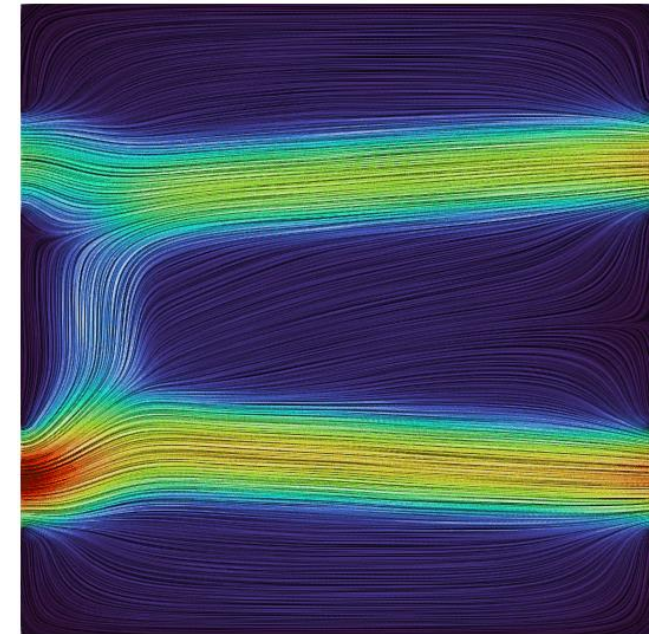
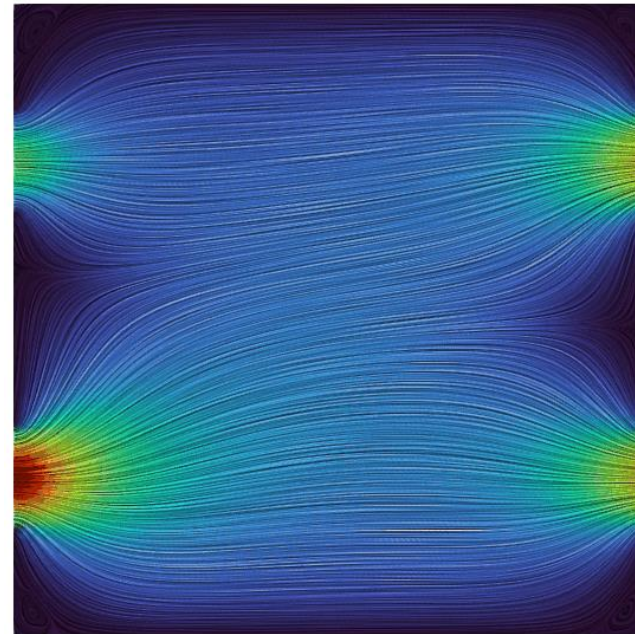
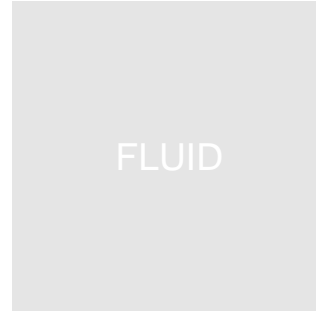




# Master's thesis: Topology Optimization for flows

Focus on:

- Numerical models (FEM)
- HPC (parallel computing +preconditioners)
- Topology Optimization algorithms
- Coupling with transport problem





# Why research and not work?

- Consultant at Healthy Reply (Padova, June - July 2023)



Structure, relationship with clients, diverse projects, high earning potentials

## Can ChatGpt do my job?

- PhD at CIMNE/UPC (Barcelona, September 2023 – now)
  - Beyond the State of the Art
  - Great career prospects
  - Skill development
  - International Network





# DC3 – Research Project

*Application of IBRA-type discretizations in implicit contact mechanics*

**Supervisors:** Riccardo Rossi, Alejandro Cornejo Velazquez

## Project goals

- Development of a IGA contact mechanics application in Kratos
- Analysis of embedded methods for the contact problem

## Current goal:

- Develop a 1D IGA frictionless contact algorithm







# Gecko

Design for *IGA*-type  
discretization workflows



European  
Commission

## Thank you!

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**agorgi@cimne.upc.edu**  
**10/11/2023**

