

# EMMA FRAXANET

Computational Social Sciences, Physics and AI  
PhD Candidate at the AI&ML Group @ DTIC UPF (Barcelona)

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## EDUCATION

PhD in Information and Communication Technologies

**Pompeu Fabra University**

 Set 2021 – Ongoing    Barcelona, Spain

- Topic: *Structural Analysis and Applications of Antagonistic Interactions in Online Social Networks*
- Supervisors: Vicenç Gómez (UPF) and David Garcia (Tu Graz, Konstanz University)
- Awarded the PhD DTIC Fellowship with teaching duties
- Teacher Assistant for *Fundamentals of Machine Learning*
- AI Doctoral Academy student

PhD Research Stay

**Complexity Science Hub | TU Graz**

 Set 2021 – May 2022    Vienna, Austria

- Doctoral researcher at David Garcia's Computational Social Science Lab, as he is the co-supervisor of my PhD Thesis

MSc Intelligent Interactive Systems

**Pompeu Fabra University**

 Set 2020 – Set 2021    Barcelona, Spain

- Average Grade 9.1/10. Honors in *Machine Learning, Autonomous Systems* and *Data Driven Social Analytics*
- Master Thesis | *Learning non-linear payoff transformations in multi-agent systems*

Erasmus+ Programme:

**Universiteit van Amsterdam & Vrije Universiteit**

 Set 2019 – Feb 2020    Amsterdam, The Netherlands

- Modules taken from the Advanced Matter and Energy Physics MSc

BSc Fundamental Physics

**University of Barcelona**

 Set 2016 – Jun 2020    Barcelona, Spain

- Honors in *Informatics* and *Electrodynamics*
- Bachelor Thesis | *Few-Body study of the two-component Bose-Hubbard model*


## PROJECTS

Check out my website for more information!

[emmafrax.github.io](https://emmafrax.github.io)

## RESEARCH INTERESTS

 **Computational Social Sciences**  
*Focus on antagonistic interactions, polarization and gender in online social systems*

 **Network Science**  
*Signed networks, temporal analysis and community detection*

 **Multi-Agent Reinforcement Learning**

## PROGRAMMING SKILLS

Python   Fortran   LaTeX  
MatLab   R

Social media Data Retrieval (Twitter API, Reddit API, ...)

NLP tools (SpaCy, NLTK, Mallet..) for methodologies such as Topic Modelling

Network manipulation and Visualization (Graph Tools, Networkx, iGraph, GEPHI...)

## LANGUAGES

Spanish   ● ● ● ● ●

Catalan   ● ● ● ● ●

English   ● ● ● ● ●

TOEFL IBt (112/120) (2020)

# EXPERIENCE: INTERNSHIPS AND SUMMER SCHOOLS

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## Complexity-GAINs International Summer School

**Complexity Science Hub & Santa Fe Institute**

📅 July 2022

📍 Vienna, Austria

## Workshop: The Great Resignation

**Complexity Science Hub**

📅 March 2022

📍 Vienna, Austria

## Top Secret Rosies: AI course

**IDEAI - UPC**

📅 June 2021

📍 Barcelona, Spain

## Erasmus+ Programme: Diversity in the Cultures of Physics

**University of Manchester, University of Sheffield, Universitat de Barcelona, Universitat Autònoma de Barcelona**

📅 2019

📍 Manchester, Sheffield, Barcelona

- Multi location one month Summer School. Workshops and lectures about Physics research environments and Diversity in STEM fields

## Summerschool: Modern Physics at All Scales

**Leiden Universiteit**

📅 2018

📍 Leiden, The Netherlands

- Workshops and lectures in the fields of fundamental physics, biophysics and condensed matter.

## Internship: Smart Nano-Bio-Devices Group

**Max Planck Institute for Intelligent Systems**

📅 2017

📍 Stuttgart, Germany

- Projects | *Nanocomposite based micro-swimmers for degradation and removal of herbicides and microjet and Bacteria propelled microtubes*

# CONFERENCES

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**WebSci 2022 Barcelona** (Local organizer & Poster)

**SunBelt 2022 (remote)** (Accepted talk)

**IC2S2 2022 Chicago** (Accepted talk)

**NetSci 2022 (remote)** (Accepted talk)

# OUTREACH PROJECTS & MEDIA COVERAGE

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**Young IT Girls Volunteer**

**Multimedia and Activities Team**

📅 2021 – Ongoing

Organization and editing of the [@UnCafèAmbYITG](#) podcast

**ETIC PhD Workshop Talk contest**

**2nd place**

📅 May 2022

**Live interview for scientific outreach catalan channel @Delbuitaltot**

**Interview**

📅 March 2022

**JornadaSTEM: Visibilitzem l'Enginyeria**

**Organizer**

📅 February 2022

Congress organized as an overview of the work of Engineering female researchers in Catalonia.

**Holiday Paper CSS Lab Austria: An Emojical Study**

**Second Author**

📅 2022

**Pintem la Facultat**

**Coordinator**

📅 2018 – 2019

Organized project in the Physics and Chemistry Faculty of University of Barcelona. Defined as an engaging set of activities for the students and faculty.