

# Anna M. Maddux

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## EDUCATION

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**École Polytechnique Fédérale de Lausanne (EPFL)** Feb 2022 – Present

*PhD in Multi-agent learning*

- PhD supervisor: Maryam Kamgarpour

**Eidgenössische Technische Hochschule Zürich (ETHZ)** Sept 2019 – May 2021

*M.S. in Statistics*

- Master's Thesis: "Behaviour Estimation in Dynamic Games" (<https://www.researchcollection.ethz.ch/handle/20.500.11850/485983>)
- Courses: Fundamentals of Mathematical Statistics, Optimization for Data Science, Advanced Machine Learning, Computational Statistics

**Albert Ludwig University of Freiburg** Oct 2015 – March 2019

*B.S. in Mathematics*

- Bachelor's Thesis: "Symmetric Random Walks and a Generalization of the Borel-Cantelli Lemma"

**Albert Ludwig University of Freiburg** Oct 2013 – Feb 2019

*B.S. in Economics*

- Bachelor's Thesis: "Hyperparameter Optimization of Neural Networks: Grid Search versus Random Search"

## RESEARCH AND WORK EXPERIENCE

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**ETH Zürich** | *Research Assistant* Oct 2021 – Dec 2021

Computational Social Science (COSS) Group under the Supervision of Dirk Helbing

**ETH Zürich** | *Research Assistant* May 2021 – July 2021

Automatic Control Laboratory (IfA) Group under the Supervision of Florian Dörfler

**Daimler Benz Stuttgart** | *Data Science Intern* April 2019 – Aug 2019

Advanced Analytics and Big Data Group

**German Bundestag Berlin** | *Research Intern* Jan 2019 – Feb 2019

Supervisor: Dr. Christoph Hoffmann, Member of the German Parliament

## FELLOWSHIPS

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**Accenture Female Talent Program** March 2020 – Oct 2020

Mentoring program to promote females in STEM and economics

**Fellow of the Friedrich Naumann Foundation for Freedom** Oct 2017 – May 2021

Academic scholarship throughout my undergraduate and graduate studies (held by 1% of German university students)

## PUBLICATIONS

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\* authors contributed equally; + mentored student

### CONFERENCE AND JOURNAL PUBLICATIONS

**Anna M Maddux**, Maryam Kamgarpour. Multi-Agent Learning in Contextual Games under Unknown Constraints. Artificial Intelligence and Statistics Conference (AISTATS), 2024.

Gabriel Vallat<sup>+</sup>, Jingwen Wang, **Anna M Maddux**, Maryam Kamgarpour, Stefana Parascho. Reinforcement learning for scaffold-free construction of spanning structures. ACM Symposium on Computational Fabrication (ACM SCF), 2023.

**Anna M Maddux**, Nicolò Pagan, Giuseppe Belgioioso, Florian Dörfler. Data-driven behaviour estimation in parametric games. International Federation of Automatic Control (IFAC), 2023.

## PREPRINTS AND UNDER SUBMISSION

**Anna M Maddux\***, Reda Ouhamma\*, Maryam Kamgarpour. Finite-time convergence to an  $\epsilon$ -efficient Nash equilibrium in potential games. In submission (arXiv:2405.15497), 2024.

## PROFESSIONAL ACTIVITIES, LEADERSHIP, AND SERVICE

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### CONFERENCE AND WORKSHOP ORGANIZATION

**Workshop Organizer**, Workshop on Entrepreneurship and Innovation | *Beatenberg, Switzerland* April 2024  
Junior retreat of the NCCR Automation

### PEER REVIEW

International Conference on Machine Learning (ICML) Workshop, International Federation of Automatic Control (IFAC), European Control Conference (ECC), Conference on Decision and Control (CDC)

## TEACHING

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### UNIVERSITY COURSES

**Teaching Assistant**, Multi-Agent Learning and Control | *EPFL Lausanne* Spring 2024  
**Teaching Assistant**, Foundations of Artificial Intelligence | *EPFL Lausanne* Fall 2023  
**Teaching Assistant**, Foundations of Artificial Intelligence | *EPFL Lausanne* Fall 2022  
**Teaching Assistant**, Analysis 2 | *ETH Zürich* Spring 2020  
**Teaching Assistant**, Microeconomics 1 | *Albert Ludwigs University of Freiburg* Fall 2016  
**Teaching Assistant**, Microeconomics 2 | *Albert Ludwigs University of Freiburg* Spring 2016  
**Teaching Assistant**, Microeconomics 1 | *Albert Ludwigs University of Freiburg* Fall 2015

### SCIENCE EDUCATION

**Presentation** at the Kantonsschule Beromünster | *Beromünster, Switzerland* Feb 2024  
Presentation under the NCCR Automation initiative "A researcher in my class".

## MENTORING

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**Antoine Bergerault**, Semester Project | *EPFL Lausanne* Feb 2023 - June 2024  
Title: "Learning to maximize the social welfare from preference feedback".  
Co-supervision with Andreas Schlaginhaufen (EPFL), and Maryam Kamgarpour (EPFL).

**César Camus-Emschwiller**, Semester Project | *EPFL Lausanne* Feb 2023 - June 2024  
Title: "Learning in potential games with coupling constraints - Practical application".  
Co-supervision with Gabriel Vallat (EPFL), and Maryam Kamgarpour (EPFL).

**Julien Drouet**, Semester Project | *EPFL Lausanne* Feb 2023 - June 2024  
Title: "Learning in Potential Games with Coupling Constraints".  
Co-supervision with Gabriel Vallat (EPFL), and Maryam Kamgarpour (EPFL).

**Sabri El Amrani**, Semester Project | *EPFL Lausanne* Oct 2023 - Jan 2024  
Title: "Reinforcement Learning from Human Feedback for the Construction of Spanning Structures".  
Co-supervision with Andreas Schlaginhaufen (EPFL), and Maryam Kamgarpour (EPFL).

**Dana Afazeli**, E3 Summer Internship | *EPFL Lausanne* Jun 2023 - Sept 2023  
Co-supervision with Kai Ren (EPFL), and Maryam Kamgarpour (EPFL).

**Titouan Renard**, Master Project | *EPFL Lausanne* Feb 2023 - July 2023  
Title: "Provable Convergence Guarantees for Constrained Inverse Reinforcement Learning".  
Co-supervision with Andreas Schlaginhaufen (EPFL), Tingting Ni (EPFL), and Maryam Kamgarpour (EPFL).

**Riccardo Ruzza**, Bachelor Project | *EPFL Lausanne* Feb 2023 - June 2023  
Co-supervision with Giulio Salizzoni (EPFL), and Maryam Kamgarpour (EPFL).

**Julien Gouraud**, Bachelor Project | *EPFL Lausanne* Feb 2023 - June 2023  
Co-supervision with Giulio Salizzoni (EPFL), and Maryam Kamgarpour (EPFL).

**Gabriel Vallat**, Master Project | *EPFL Lausanne*

Feb 2023 - July 2023

Title: “Reinforcement learning for scaffold-free construction of spanning structures”.

Co-supervision with Maryam Kamgarpour (EPFL), and Stefana Parascho (EPFL). Resulting paper accepted at ACM 2023.

**Dorsa Majdi**, E3 Summer Internship | *EPFL Lausanne*

Feb 2023 - July 2023

Co-supervision with Maryam Kamgarpour (EPFL).

## LANGUAGES

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**Computer Languages:** Python, Matlab,  $\text{\LaTeX}$

**Languages:** German (mother tongue), English (fluent), French (B1)