Fellow [9]

Title

PhD position | MSCA Doctoral Network | Forecasting for social innovation using language technologies

About the Project

About Data2Action

Data2Action is the Marie Skłodowska-Curie European Doctoral Training Network programme uniting social innovation with data science & AI for common good. Data2Action exists to make emerging technology work harder for humanity, enabling us to co-create a healthier, fairer and more sustainable world for all.

Data2Action aims to train the next generation of leaders in data science, AI and social innovation, through solid research training, mentoring, networking and collaboration with industry and third sector.

Data2Action is an ambitious new research and development project that will:

- Show social pioneers how to harness data science and AI for common good and conversely.
- Shape the future of technology development to serve social innovation and the common good.

The Data2Action project is situated at the intersection between social innovation, digital technology development and "tech/data/AI for good".

Data2Action will bring together top researchers and experts in data science, AI, and social innovation to collaborate on five pivotal outcomes that will turn possibilities into positive impact.

#1 Co-creating a **research roadmap**
An evidence-based framework of best practices for applying data science and AI to drive social innovation more efficiently and rapidly.

#2 Developing and testing through **living labs**
Demonstrator projects showcasing the benefits of data-driven social innovations addressing **climate change**, **social justice**, **democracy**, **health**, and **ageing**.

#3 Establishing a **Data/AI-for-good 'academy'**
Open-source training and tools to build capacity in social innovators, entrepreneurs and grassroots changemakers, so they can harness data science and artificial intelligence effectively, responsibly and equitably.

#4 Carving out **career pathways for pioneers**
A blueprint for well-paid roles with prospects in purposeful data science and AI.

#5 Guiding **better informed social leadership**
Practical advice, support and advocacy to encourage policymakers, funders, and government organisations to ethically embed data science and AI for common good.

Doctoral Candidate Research Project

The main objective of the research project of the doctoral candidate is to develop computational forecasting methods to support social innovators. In particular, the aim is to help social innovators to anticipate future implications of political, economic, and social factors affecting their work. To help organizations anticipate societal trends (e.g., migration patterns, legislative changes), evidence-based forecasting techniques regularly used by human experts will be combined with advanced language technologies, such as large language models (LLMs). These should help the users evaluate potential outcomes of their actions based on comparable past experiences.

To achieve this, the fellow will:

1) Identify and categorize questions about the future that are most relevant and impactful for social innovation contexts, considering principles such as ethics, security, inclusion, diversity and equity principles, as well as environmental perspective.

2) Translate evidence-based human forecasting techniques into computational methods suitable for integration with LLMs and related technologies. This will include decomposing complex forecasting problems into sub-questions, designing and implementing strategies to utilize language technologies and web-based information retrieval for data collection relevant to forecasting tasks, and creating methods to aggregate and synthesize forecasts, applying principles inspired by prediction markets and the wisdom of crowds.

3) Develop user-friendly, automated forecasting tools enabling social innovators to effectively obtain practical, evidence-based forecasts. These tools will be validated

retrospectively on known historical scenarios and prospectively in collaboration with social innovators who are partners in the project.

Additionally, the doctoral candidate will complete two secondments at partner organizations. Namely, they will work with [Data Orchard](#) to gain an understanding of how social innovators interface with data and AI, and [Universidade Catolica Portuguesa](#) to experiment and refine the tool on a selection of their case studies.

The Doctoral Candidate will be expected to:

- Report on findings by publishing scientific articles, resulting in a PhD dissertation;

- Present findings at (inter)national meetings/conferences;

- Contribute to the wider work of the Data2Action project;

- Contribute to educational activities of the department and within the consortium.

Requirements

Essential:

- Eligible applicants must possess or be finalising a Master's degree or an equivalent degree in a relevant discipline for Data2Action, especially computer science, artificial intelligence, ICT engineering, and digital humanities.
- Excellent English language proficiency
- Competencies: Open-minded, self-aware, collaborative, critical thinker, team player, strong communicator.
- High interest in the topic of social innovation as the key concept of the PhD project.
- Applicants must be available full-time to start the program in September 2025.

Desirable:

- Prior experience in natural language processing or machine learning or programming

- Prior experience in academic writing or scientific publications
- Prior practical or research experience with social innovation and/or the public sector and/or artificial intelligence

Eligibility Conditions:

- Applicants do not already hold a doctoral degree.
- Applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of recruitment for more than 12 months in the 36 months immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.

Application Deadline:

Sunday 18th May 2025

We Offer:

The MSCA programme offers competitive and attractive working conditions. You will have an employment contract with [Jožef Stefan Institute](#) and enroll into a PhD programme at [Jožef Stefan International Postgraduate School](#). You will benefit from a competitive salary, annual leave, social security coverage. The salary will be composed of:

- A living allowance (3400 euros per month – gross salary) which is adjusted by applying a country correction coefficient to the living allowance of the country in which the researcher is recruited. The country correction coefficients are indicated in [Table 1 of the MSCA Work Programme](#)
- Monthly mobility allowance: 600 euro/month
- Monthly family allowance, if applicable and depending on the family situation: 660 euro/month

For additional information see [EU MSCA website](#). Please be aware that these amounts are subject to taxes and the exact salary will be confirmed upon appointment. The research project should result in a PhD thesis.

Selection process

Our selection procedure is open, transparent, merit-based, impartial, and equitable, in line with the Code of Conduct for the Recruitment of Researchers (link).

The selection procedure will consist of the following steps:

- Eligibility check: The Recruitment Committee will check each application is complete and that applicants fulfil the eligibility criteria described in the previous section.
- Screening: Applications will be reviewed for eligibility and suitability based on the criteria listed for each position.
- Online interviews: The short-listed candidates will be interviewed by a Selection Committee that will include the recruiting Principal Investigators. Selection committees will bring together diverse expertise and competencies and have an adequate gender balance.
- The recruiting institution will notify the selection outcome after the interview.

Additional Comments

For more information about this position, you can contact Prof Mitja Luštrek (mitja.lustrek@ijs.si).

We are hosting two information sessions on Tuesday 29th April 2025 for those interested in applying for a PhD fellow position with Data2Action. The session will start with a 15-minute presentation and then there will be a Q&A. We are running two sessions to ensure maximum global reach. Both sessions will be the same so you should only attend one. Sign up here:

Tuesday 29th April 2025, 10am UK time – sign up here:

https://events.teams.microsoft.com/event/011990ff-324b-4c4d-a7f0-918a57283617@c72728f7-4cca-49fe-bc49-47ab02f7a930

Tuesday 29th April 2025, 6pm UK time - sign up here

https://events.teams.microsoft.com/event/11bf7da0-a047-4ebb-9089-2e90c9756c45@c72728f7-4cca-49fe-bc49-47ab02f7a930