

Position for an MS student in the ERC grant PRO-DEMOCRATIC

The [Faculty of Mathematics, Informatics and Mechanics](#) of the [University of Warsaw](#) offers a position for an MS student in the ERC grant, [PRO-DEMOCRATIC](#), led by [Piotr Skowron](#).

About the project

The project focuses on formal models where a group of individuals needs to make a collective decision. The decision must truly represent a compromise. We focus on group fairness understood as proportionality. There are numerous real-life scenarios that involve collective (public) decisions, and where our solutions apply. Examples include: elections of representative bodies (such as parliaments, faculty boards, etc.) or participatory budgeting elections (where citizens decide how to allocate a part of a municipal budget). In addition, proportional algorithms are used for selecting nominees for an award, for constructing rankings of movies or books, for selecting validators in consensus protocols, such as the blockchain, or for improving genetic algorithms.

The goal of this project is to develop generic methods of reasoning about equity of treatment of voters, and to design new algorithms that satisfy the most demanding criteria of proportionality. The new methods should be applicable to a number of specific models that concern public decisions.

Details of the position

- ✓ **Salary: approximately 4 000 PLN per month**, before tax for part-time employment (50% of involvement)
- ✓ **Travel:** Additional budget for participating in conferences and for research visits (if the results of the work will be published).
- ✓ **Duration:** one-year or two-years (negotiable).

Requirements

- ✓ Being an MS student in a relevant area of science (which could be computer science, mathematics, economics or operations research).
- ✓ Fluency in English.
- ✓ Ability to implement algorithms and to perform computer simulations is an advantage.

How to apply

The application (cv + transcript of records) should be sent to p.skowron@mimuw.edu.pl. The closing date is **November 28, 2023**.



European Research Council
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