



**PhD position for the National Science Centre project “Hybrid models of natural reasoning”  
implemented at the Institute of Mathematics of the Polish Academy of Sciences**

The research project aims to develop and study hybrid models of natural reasoning that combine methods of logic and deep learning. In hybrid models, reasoning is ultimately based on rules of logic, but neural networks are involved in tasks such as the process of premise selection or construction of reasoning steps. We will mostly investigate fragments of language, i.e. various subclasses of first order (or modal) logic that resemble natural language. However, we will be interested in analyzing and interpreting interactions between the logical and the neural components from the cognitive perspective rather than simply optimizing them.

We offer a genuinely interdisciplinary scientific environment, and oversight of the PhD student's research activities by two advisers – one specializing in logic (prof. Maciej Malicki, Institute of Mathematics of the Polish Academy of Sciences), and another one specializing in cognitive science/computational linguistics (prof. Jakub Szymanik, University of Amsterdam). During the implementation of the project, we will cooperate with researchers from Poland, Netherlands and USA.

To learn more about the project, write to [mmalicki@impan.pl](mailto:mmalicki@impan.pl).

### Your Profile

We expect:


- passion for interdisciplinary research at the intersection of cognitive science, logic and computer science
- strong background in formal methods, and a scientific university degree (defended before Aug 1st) in a field relevant to the project: cognitive science, computer science, computational linguistics, philosophy, logic, mathematics etc.
- analytical skills and scientific mindset, independent, self-reliant and dedicated style of work
- programming skills and/or experience in machine learning
- good command of English (oral and written)

### Remuneration

Provided that the candidate gets independently enrolled to a doctoral school (preferably: Doctoral School of Exact and Natural Sciences at the University of Warsaw), the school and the project stipend of 5000zł will be paid for the first 36 months, and the school stipend of appr. 3200zł for the remaining 12 months. Otherwise, the project stipend of appr. 3100zł will be paid for 36 months, and the school stipend of appr. 3200zł for the remaining 12 months. In any case, the remuneration should suffice to cover costs of living in Warsaw, including accommodation.

### Application Procedure

For full consideration, send your application to [mmalicki@impan.pl](mailto:mmalicki@impan.pl) by May 15th, 2021. It should include a statement, a detailed description of your academic interests, experience, and achievements, as well as at least one letter of recommendation (or the name, address, and e-mail address of at least one reference). Selected candidates will be interviewed on-line.

**DYREKTOR**  
Instytutu Matematycznego  
  
**Prof. dr hab. Łukasz Stettin**