Doctoral student (Automation of Continuous Experimentation Processes)

Masaryk University, located in Brno, Czech Republic, is one of Central Europe's leading universities and the second-largest university in the Czech Republic. Founded in 1919, it has grown into a broad, research-intensive institution with 10 faculties, more than 35,000 students, and approximately 6,000 employees. The university combines a strong academic tradition with a modern, internationally oriented research environment and participates actively in European and global research networks. Masaryk University is ranked among top 5% universities in the world (according to QS World University Rankings).

Faculty of Informatics at Masaryk University (FI MU) is a respected centre for computer science research and education. Established in 1994 as the first faculty of informatics in the Czech Republic, it now hosts approximately 2,500 students and several hundred academic, research, technical, and administrative staff. The faculty provides an open and collaborative environment for research in a broad range of areas, including theoretical computer science, artificial intelligence, cybersecurity, software engineering, data science, human-computer interaction, and computational biology.

Brno, the second-largest city in the Czech Republic, is a dynamic university city with a strong technology and innovation ecosystem. With more than 65,000 university students across its higher education institutions, Brno offers a lively and international academic environment. The city is also home to numerous research institutes, technology companies, start-ups, and R&D centres, making it an attractive place for early-career researchers to live, study, and work.

Useful links

- PhD study program at FI MU
- About Brno

Research Description

We are looking for **one doctoral student** to work on basic and applied research in the area of **Continuous experimentation (CE).** CE belongs to the empirical software engineering field, and it represents a data-driven software development process, in which product decisions are made based on collected field data (e.g. via experimentation) rather than guesswork.

One of the major obstacles companies face when implementing CE is the steep requirements in terms of human, computational, and financial resources. Although existing platforms can automate certain tasks related to experiment execution (e.g. metrics collection and subsequent analysis), other tasks, such as deciding what to experiment on (i.e., hypothesis formulation) and product variant generation, are still done manually. Resource constraints may prevent startups/SMEs from adopting CE, which can impact their ability to deliver high-quality products or meet their business goals.

Our long-term goal is to advance the state-of-the-art of CE by **developing AI-based methods enabling the shift from manual CE to autonomous CE (ACE)**, in order to lower the entrance barrier for CE adoption by companies with limited resources.

The research will involve both quantitative and qualitative research methods and will leverage approaches across multiple research areas, e.g. process mining, feature localisation, LLMs and design science.

Related publications

- Fagerholm, Fabian, et al. "The RIGHT model for continuous experimentation." *Journal of Systems and Software* 123 (2017): 292-305.
- Chren, Stanislav, et al. "Data-limited Continuous Experimentation (dICE): a literature review." *International Conference on Software Business*. Cham: Springer Nature Switzerland, 2024.
- Auer, Florian, et al. "Controlled experimentation in continuous experimentation: Knowledge and challenges." *Information and Software Technology* 134 (2021): 106551.

Research Team

The research will be carried out in the **Lab of Software Architectures and Information Systems (LaSArIS)**, a leading research group in the software engineering field at FI MU. The student will be supervised by **Bruno Rossi** and co-supervised by **Stanislav Chren**.

The doctoral studies at FI MU involve a short mandatory research internship abroad (typically 1-3 months). It will be possible to arrange an internship at one of our international collaborators, such as

- Aalto University, Finland
- Lund University, Sweden

Funding

The standard length of **full-time doctoral studies** at FI MU is **4 years**. The doctoral studies are funded through a scholarship in accordance with the doctoral studies financing rules.

Requirements

From a successful candidate, we expect a **recent master's degree** in a relevant area of **theoretical computer science** or **software engineering** with an excellent academic performance.

We value expertise in domains such as empirical software engineering, software development processes, software architecture analysis and design, software repository mining, process mining, LLMs and ML, and qualitative research. We also value familiarity with modern AI tools, Python, Git and LaTeX. Having good communication skills and the ability to work both independently and as a member of a research team is an advantage. A good command of English (at least B2 level) is necessary.

You do not need to be an expert in CE or AI fields yet, as long as you are familiar with the general software engineering methods and are willing and able to learn.

How to Apply

The application process consists of several rounds:

Round 1
Send an email to Stanislav Chren (chren@mail.muni.cz) with:

- subject “Ph.D. position in Continuous Experimentation”
- attachments (each document as a single, easy-to-read PDF file):
    a. A **cover letter** (1–2 pages) that explains concisely what your key merits are that make you the right candidate for the position.
    b. Your **CV**, including your academic achievements and prior research or industrial experience.
    c. A single document that contains relevant **degree diplomas** and t**ranscripts of studies**.

The deadline for this step is **October 18th 2026, 23:59 (CET).**

Round 2
The applications will first be reviewed by the supervisor and co-supervisor. The most promising candidates may be invited for a short interview. Before the interview, the applicants may be asked to complete a simple practical assignment on the topic to demonstrate the required skills.

The interview invitations are expected to be sent by the end of October, and the interviews will be carried out in the first half of November.

Round 3
The selected applicant will be asked to submit an online application form with the necessary attachments, including the acceptance letter from the doctoral supervisor as specified in the official doctoral application instructions.

The deadline for this step is **November 30th 2026.**

The admission committee will review the application and may invite the applicant to a short interview on **January 8th, 2027.**

If successful, the applicant will be enrolled in the Spring 2027 semester of the doctoral study program, starting from **February 15th, 2027.**

We reserve the right for justified reasons to leave the position open, to extend the application period, reopen the application process, and to consider candidates who have not submitted applications during the application period.

Contacts

Stanislav Chren (chren@mail.muni.cz)