

HABILITATION THESIS REVIEWER'S REPORT

Masaryk University

Applicant

Mgr. Tomáš Foltýnek, Ph.D.

Habilitation thesis

Information Technologies for Countering Academic Fraud

Reviewer

Leanne Wu, PhD

Reviewer's home unit, institution

University of Calgary

Mgr. Foltýnek has submitted a habilitation thesis on the subject of "Information Technologies for Countering Fraud." I have been appointed to serve as reviewer for this thesis, as an Associate Professor (Teaching) at the University of Calgary in the Department of Computer Science, with tenure. My own research is focused on data privacy in post-secondary education, and extends to computer science education, with particular interest in student experience (including academic integrity in Computer Science).

The thesis encapsulates work which Mgr. Foltýnek has completed at three institutions: Mendel University, the University of Wuppertal (Germany), and Masaryk University. The work presented by the thesis covers the following major themes:

- Plagiarism as a form of academic dishonesty
- Tools for detecting specific kinds of plagiarism
- Investigating the detection of unauthorized generation of content (such as large-language models and generative AI)

Unique and notable contributions of this research include a focus on academic integrity in Central Europe, with a focus on Czechia and surrounding nations, the application of skills and techniques specific to computer science to provide a technical lens on his research project, and the successful leveraging of pan-European and international collaborations to add scope and depth to relevant research projects. The thesis is thoughtfully written, providing a clear introduction to academic integrity, plagiarism, and related tools and techniques used to detect cases of academic dishonesty.

The work described by the thesis is connected but broad, with some work being recognizably positioned as computer science (for example, investigating new techniques for similarity detection of different programming languages), and other work being more focused on educational research, for example policy recommendations for academic integrity, or investigating the state of contract cheating in Czechia. Such multidisciplinary breadth is rare and deserves recognition for its unusual scholarly context.

This research has allowed Mgr. Foltýnek to develop expertise in technical perspectives on academic integrity, especially with a focus on generative artificial intelligence. This is an area which has preoccupied much of educational research at the post-secondary level, no matter this discipline or the subject matter area. The habilitation thesis, in the opening paragraphs of Chapter 4, provides a clear history of these technologies without overstating their

capabilities, which again highlights the combination of Mgr. Foltýnek's technical knowledge and skills with his considerable expertise on plagiarism, contract cheating, and other forms of academic dishonesty.

The nature of the projects taken on by Mgr. Foltýnek and described in the thesis precludes some of the expectations I understand are typical of a habilitation thesis to demonstrate the ability of the applicant as an independent researcher, *i.e.* a succession of work which features the candidate as the sole author or as the major contributor. Of the papers provided by Mgr. Foltýnek, only two papers in 2018 and 2019 (some of the earliest works) would fit this traditional criterion. Both are well-written, methodologically sound, and the literature survey from 2019 (for which the commentary states that 70% of the work was done by Mgr. Foltýnek) is especially impressive in its scope.

This paper, "Academic Plagiarism Detection: A Systematic Literature Review" identifies 239 papers on the topic and classifies them based on approach into a comprehensive taxonomy. The approach and focus of this review is primarily technical in its nature and provides a novel lens to consider the multitude of approaches which educators have applied to this important problem.

Some of the other work (most recently, "Authorship Verification Using Cloze Test with Large Language Models") has clearly been accomplished by students under the supervision of Mgr. Foltýnek, and these demonstrate his abilities and potential as a mentor and supervisor. These projects are logically designed, methodologically sound, and make appropriate and creative contributions to the body of knowledge in academic integrity.

Most of the remaining work provided with the habilitation thesis show Mgr. Foltýnek situated in an international community of similarly-minded scholars, in positions of engagement and leadership. I note especially his role with the European Network for Academic Integrity (ENAI), for which he notes in this thesis he was a co-founder, and, according to the organization's website, where he currently serves as President and participates in multiple working groups. This network is growing, comprised of over 31 individual and over 40 institutional members (including my own institution), hosting annual summer schools, as well as the European Conference on Academic and Plagiarism.

In these papers, such as "Testing of Support Tools for Plagiarism Detection," "ENAI Recommendations on the ethical use of Artificial Intelligence in Education," and "Testing of detection tools for AI-generated text", Mgr. Foltýnek has demonstrated his ability to work as part of an ongoing international collaboration. It is true that most of these works feature comparatively small contributions from Mgr. Foltýnek, but they are not disproportionate given the number of co-authors involved. I also note that the scope and clarity of these works, with the ability to gather data from institutions in numerous countries and the ability to surface and evaluate multiple perspectives critically, are strong evidence that Mgr. Foltýnek is part of a community of international experts active in research on academic integrity, fostered by organizations such as ENAI. The impact of these works in terms of the number and quality of citations is very clear and enviable. Mgr. Foltýnek has continued to build on his impact with his work in knowledge translation, such as with the three handbooks on topics related to academic integrity he discusses in Chapter 2.

In the closing chapters of his habilitation thesis, Mgr. Foltýnek clearly articulates his research agenda moving forward, to move beyond specializing in more traditional modes of plagiarism and considering assessment of students in a more critical way. This is consistent with trends I observe in my own research community, which are grounded in computer science education rather more general forms of educational research (and exists relatively independent of organizations such as ENAI). I anticipate that Mgr. Foltýnek will continue his

research in directions which continue to create international impact and which will benefit his own work at Masaryk University in a more immediate way.

Considered in its entirety, the habilitation thesis fulfills the goals stated by Mgr. Foltýnek in the introduction. It explores academic integrity and cheating, shows a wide range of tools and techniques which might be used to better detect cases of possible misconduct, and thoughtfully demonstrates a myriad of considerations which should be applied to best use these tools and techniques to probe whether some kind of dishonesty has occurred.

Reviewer's questions for the habilitation thesis defence (number of questions up to the reviewer)

The focus of your work on plagiarism detection tools (for example, in “Testing of support tools for plagiarism detection” could be summarized as being centered on the technical advantages and disadvantages of each tool, particularly their efficacy in detecting particular kinds of plagiarism. Are there other considerations which might be of interest to an institution as a customer of various kinds of technology-based tools which might preclude the selection of the best tools you identify? Which of these considerations would be especially commonplace or important?

Your most recent work “Authorship Verification Using Cloze Test with Large Language Models” used cloze tests generated by large language models as a way to verify if a test-taker had authored a particular text. The texts you used were written in English, Czech, and Slovak. Can you comment on whether you believe the language in which the original text was written might have an impact on the results? What would you expect to see if the sample of source texts was larger?

Conclusion

The habilitation thesis entitled *Information Technologies for Countering Academic Fraud* by Mgr. Tomáš Foltýnek, Ph.D. **fulfils** requirements expected of a habilitation thesis in the field of Informatics.

Date: August 20, 2026

Signature: