UNIVERSITY of GUELPH

COLLEGE *of* ENGINEERING AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

MSc Defence

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Jeremie Fraeys De Veubeke

*Evaluating the Change of Foundational Skills in
Tech Co-op Job Postings*

Chair: Dr. Stefan Kremer
Advisor: Dr. Daniel Gillis
Advisory: Dr. Jason Ernst (external member)
Non-Advisory: Dr. Judi McCuaig

Abstract:

The Canadian labour market is undergoing a rapid transformation driven by AI and automation, forcing companies to rethink their candidate selection criteria to match evolving qualifications. Today's candidates must exhibit not only technical proficiency but also essential foundational skills to stand out.

The lack of standardized definitions and limited research on specific skill requirements across job types presents significant challenges. This study examines the foundational skills highlighted in co-operative education job ads for engineering and IT students, utilizing term frequency-inverse document frequency analysis. Our goal is to identify critical foundational skills and trace their evolution over time.

Our findings spotlight a growing demand for foundational skills, with notable differences between IT and engineering roles. Engineering positions prioritize problem-solving and teamwork, while IT roles emphasize adaptability and communication. These insights offer educators valuable guidance and actionable recommendations to adapt curricula, ensuring students are prepared for the evolving job market.