Max Ellis

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Education

Master of Science, Computing Science, University of Alberta, Edmonton **June 2022**

- Advisor: Sarah Nadi
- GPA Overall: 4.0

Bachelor of Science, Computer Science, Washington State University, Vancouver **May 2019**

- GPA Overall: 3.92

Technical Skills

Languages:	Java, C++, C, Python, Javascript, HTML, CSS
Libraries:	RefactoringMiner, Apache Commons, IntelliJ IDEA API, Pandas, NumPy, MatPlotLib
Databases:	MySQL
Tools:	Github, Excel, IntelliJ IDEA, Eclipse, Microsoft Visual Studio, Virtual Box
Platforms:	Microsoft Windows, Ubuntu Linux

Work Experience

Research Assistant **University of Alberta, Edmonton** **May 2020 – December 2021**

- **Led** a project with an external collaborator to **re-imagine** operation-based refactoring-aware merging and **presented** weekly status updates to stakeholders
- Emulated double dispatch in **Java** to make operation-based merging feasible to **scale and maintain**
- **Contributed** to the development of RefactoringMiner and **received public acknowledgement** of reported issues and suggested features
- **Leveraged** sparsely documented third party libraries to programmatically perform refactorings and detect refactoring-related merge conflicts

Teaching Assistant **University of Alberta, Edmonton** **September 2019 – May 2020**

- **Delivered course material** in a lab setting to help students **succeed** in CMPUT 379 (Operating Systems)
- **Presented** additional information and **answered questions** about operating systems and **C/C++**
- **Designed** assessments, quizzes, and exams alongside the instructor to **assess** the students' mastery of the material

STEM Tutor **Clark College, Vancouver** **April 2016 – May 2019**

- **Communicated** knowledge of all computer science courses offered at Clark College to students through a **variety of methods** to **adapt to each student's** learning style
- Fostered a **positive and inclusive** environment for all students and staff using **interpersonal skills**

Selected Projects

RefMerge (2019 – Present). An operation-based software merging approach that considers the semantics of refactorings to improve the merge resolution process. Reduced unnecessary conflicts by **25%** while **eliminating false negatives** reported by Git.
IntelliMerge Evaluation (2019 – 2020). A **systematic investigation** to determine the limitations of the state-of-the-art refactoring-aware merging tool, IntelliMerge, followed by an **empirical evaluation** across 34,000 real-world merge scenarios.
Cornerstone Web Application (2019). Worked with a **team of four** other students to develop the client and server for a Javascript application that interfaced between a web UI and internal database using **React and NodeJS**.

Publications

Max Ellis, Sarah Nadi, and Danny Dig. "Operation-based Refactoring-aware Merging: An Empirical Evaluation". In: *IEEE Transactions on Software Engineering* (TSE 2022) Status: Major Revision Currently Under Review
Preprint: arxiv.org/pdf/2112.10370.pdf

References Available on Request