




# Max Ellis

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Camas, WA 98607, USA

## 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, adapting 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](https://arxiv.org/pdf/2112.10370.pdf)

**References Available on Request**