

# Ian McCormack

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## Education

**Ph.D. Software Engineering, Carnegie Mellon University**

*September 2021 - Present*

**University of Wisconsin-Eau Claire**

*summa cum laude, May 2021*

- **B.S.**, Computer Science
- **B.A.**, English, Rhetorics of Science, Technology, and Culture
- **Minor**, Mathematics

## Publications

### *Preprints*

- **Ian McCormack**, Joshua Sunshine, Jonathan Aldrich, “A Study of Undefined Behavior Across Foreign Function Boundaries in Rust Libraries.” *Preprint*. April 7th, 2024. [PDF](#)
- **Ian McCormack**, Tomas Dougan, Sam Estep, Hanan Hibshi, Jonathan Aldrich, Joshua Sunshine. ““Against the Void”: An Interview and Survey Study on How Rust Developers Use Unsafe Code.” *Preprint*, arXiv:2404.02230. April 2nd, 2024. [PDF](#)

### *Peer Reviewed Publications*

- Jenna DiVincenzo, **Ian McCormack**, Hemant Gouni, Jacob Gorenburg, Mona Zhang, Conrad Zimmerman, Joshua Sunshine, Éric Tanter, Jonathan Aldrich. “Gradual C0: Symbolic Execution for Efficient Gradual Verification.” *Under minor revision for TOPLAS*, arXiv:2210.02428. January 19th, 2024. [PDF](#)
- Chris Johnson and **Ian McCormack**. “Computational Making via Bidirectional Parametric Modeling.” In David Swart, Frank Farris, and Eve Torrence, editors, *Proceedings of Bridges 2021: Mathematics, Art, Music, Architecture, Culture*, pages 359–362, Phoenix, Arizona, 2021. Tessellations Publishing. [PDF](#)

### *Competitions*

- Reese Grimsely, Edward Andert, **Ian C. McCormack**, Eve Hu, Bob Iannucci. “One Program to Rule the Intersection”. In: *CPS-IoT Week, Student Design Competition: Networked Computing on the Edge*, 2021. Won 2<sup>nd</sup> place. [Video](#)
- **Ian C. McCormack**. “A Software Library Model for the Internet of Things.” In *ACM SPLASH Student Research Competition*, November 15–20, 2020, Virtual, USA. 10.1145/3426430.3428136. [PDF](#)

## Honors & Awards

**NSF Graduate Research Fellowship**

*2021 - 2026*

## Experience

**Research Assistant, Carnegie Mellon University’s REUSE Program**

*June 2020 - May 2021*

*Mentors: Bob Iannucci, Jonathan Aldrich*

- Explored and prototyped a novel software repository system to allow mixing and matching disjointly-versioned software modules.
- Implemented a networking layer for the [TTPython](#) distributed programming framework to support an autonomous vehicle intersection that won 2<sup>nd</sup> place in the 2021 CPS-IoT Week’s Student Design Competition.

## Technology Intern, Travelers Insurance, St. Paul, Minnesota

June - August, 2019

- Solved ongoing issues with configuring production environments by creating a .NET application to allow partial backup and restoration of Windows Registry configurations.
- Identified employees' shared frustrations with onboarding and provisioning and used Angular to create a wireframe application that would improve the experience for new hires.

## Talks

### Conferences & Workshops

- **Ian McCormack**. Examining Rust Developers' Motivations for Using unsafe Code. Talk at the *CyLab Partners Conference*. October 3rd, 2023. [📄 Slides](#)
- **Ian McCormack**, Chris Johnson. Direct Manipulation for Computational Making. Lightning Talk at *SPLASH-E*, November 20th, 2020. [📄 Slides](#), [📄 Abstract](#)

### Invited Talks & Lectures

- Examining Rust Developers' Motivations for Using unsafe Code. Lecture at CMU for *Secure Coding (14-735)*, taught by Hanan Hibshi. November 9th, 2020. [📄 Course](#), [📄 Slides](#)
- Introduction to Rust. Lecture at CMU for *Secure Coding (14-735)* taught by Hanan Hibshi. August 31st, 2023. [📄 Course](#), [📄 Slides](#)
- Introduction to Rust. Lecture at CMU for *Programming Language Pragmatics (17-363/17-663)* taught by Jonathan Aldrich, November 10th, 2022. [📄 Course](#), [📄 Slides](#)
- Introduction to Rust. Lecture at CMU for *Secure Coding (14-735)* taught by Hanan Hibshi. November 9th, 2022. [📄 Slides](#)

## Mentorship

- Tomas Dougan. *CMU REUSE Program*, June - August, 2023.
- Timothy Zhou. *CMU REUSE Program*, June - August, 2022.

## Service

- Student Organizer. PLATEAU2024 Workshop. Pittsburgh, PA, February 19-20, 2024. [📄 Site](#)
- Student Organizer. PLATEAU2023 Workshop. Berkeley, CA, February 13-14, 2023. [📄 Site](#)