Maxwell Levatich

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Education

Columbia University *PhD in Computer Science* Sept 2020 – Present

- **Thesis (proposed):** "C++ Program Partitioning for Information-Flow Control"
- Advised by: Stephen A. Edwards

Yale University *BS and MS in Computer Science* Sept 2016 – May 2020

- GPA: 3.67
- **Coursework:** Software Verification, Compilers, The Hardware/Software Interface

Teaching

COMS 4995: Parallel Functional Programming Fall 2025
Instructor of Record *Columbia University*

- Lectured to 50 students in upper-level elective covering Haskell and its support for parallelism
- Augmented existing syllabus with live-coding exercises and weekly short quizzes for attendance

ENGI 1006: Introduction to Computing for Applied Scientists Fall 2023
Head Teaching Assistant (1 of 10) *Columbia University*

- Held weekly review section with supplemental exercises
- Designed exam questions and exam review exercises

COMS 4995: Parallel Functional Programming Fall 2021
Teaching Assistant and Project Advisor *Columbia University*

COMS 4115: Programming Languages and Translators Fall 2021
Teaching Assistant and Project Advisor *Columbia University*

CS 112: Introduction to Computer Programming Spring 2020
Head Teaching Assistant (2 of 12) *Yale University*

- Held weekly review section with supplemental exercises

CS 50: Introduction to Computer Science Fall 2019
Head Teaching Assistant (3 of 32) *Yale University*

- Held weekly review section with supplemental exercises
- Led weekly TA meetings for a large cohort of 32 TAs

CS 112: Introduction to Computer Programming Spring 2019, 2018
Teaching Assistant *Yale University*

CS 50: Introduction to Computer Science Fall 2018, 2017
Teaching Assistant *Yale University*

Journal and Conference Publications

Anonymous submission under review ICSE '26
Maxwell Levatich, Stephen A. Edwards

C Program Partitioning with Fine-Grained Security Constraints and Post-Partition Verification MILCOM '22
Maxwell Levatich, Robert Brotzman, Benjamin Flin, Ta Chen, Rajesh Krishnan, Stephen A. Edwards

Supercharging Plant Configurations Using Z3 CPAIOR '21
Nikolaj Bjørner, *Maxwell Levatich*, Nuno P. Lopes, Andrey Rybalchenko, Chandrasekar Vuppalapati

Solving LIA* Using Approximations VMCAI '20
Maxwell Levatich, Nikolaj Bjørner, Ruzica Piskac, Sharon Shoham

Talks

Using Z3 to Validate Executions of a Program Partitioner FMCAD '21
at *Formal Methods in Computer-Aided Design Student Forum*

Certifications and Honors

Columbia CTL Teaching Development Program Certification Spring 2025
Foundational track - advanced track certification expected Fall 2025

Yale Student Research in Computer Science Award Spring 2020
Awarded to 2 Computer Science majors in the graduating class

Yale CS50 SCAZ Award Fall 2018
For "superior committment and zeal" as a Computer Science TA (3 of 32)

Service

Student Volunteer at *Symposium on Principles of Programming Languages* POPL '23

Student Volunteer at *Programming Language Design and Implementation* PLDI '22

Artifact Evaluation for *Conference on Computer-Aided Verification* CAV '18

Industry

Research Intern Summer 2023, 2024
Peraton *Basking Ridge, NJ*

- Implemented pointer dependency tracking for C program compartmentalization (DARPA GAPS program)
- Developed automatic state machine repair technique using Z3's fixedpoint solver (DARPA BPL program)

RiSE (Research in Software Engineering) Intern Summer 2020, 2022
Microsoft *Redmond, WA*

- Prototyped constraint-based automated tournament scheduling solution using Z3 for national sports client
- Optimized constraint-based production line configuration for car manufacturing client
- Extended Z3 with support for theory of Unicode strings

Kernel Development Intern Summer 2018
Oracle *Redwood Shores, CA*

- Backported CVE patches to older supported versions of the Oracle Linux kernel
- Created portable lightweight Docker container and web frontend for internal developement tools

Software Projects

Abelon *mlevatich/Abelon*

- Turn-based tactical role-playing game in Lua with Löve2D engine
- Writing, art, animation, music my own work

Guy Battle *mlevatich/guy-battle*

- 2D fighting game in C with SDL2 rendering and audio library
- Art, animation, music my own work