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 25 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   MILCOM '22
and Post-Partition Verification
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