

Calvin Deutschbein

PRONOUNS: HE/HIM/HIS

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Education

University of North Carolina at Chapel Hill

DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE

[Chapel Hill, NC](#)

projected Spring 2021

University of North Carolina at Chapel Hill

MASTER OF SCIENCE IN COMPUTER SCIENCE

[Chapel Hill, NC](#)

2017

University of Chicago

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

[Chicago, IL](#)

2015

University of Chicago

BACHELOR OF ARTS IN MATHEMATICS

[Chicago, IL](#)

2015

Publications

Mining Security Critical Linear Temporal Logic Specifications for Processors

C. Deutschbein, C. Sturton

Specification mining with typed LTL templates generates manageable numbers of human readable security assertions.

[MTV 2018](#)

End-to-End Automated Exploit Generation for Validating Security of Processor Designs

R. Zhang, C. Deutschbein, P. Huang, C. Sturton

Backwards symbolic execution gives deployable exploits for known security bugs.

Nominated for Best Paper.

[MICRO 2018](#)

Multi-core Cyclic Executives for Safety-Critical Systems

C. Deutschbein, T. Fleming, A. Burns, S. Baruah

Real-time scheduling of multiprocessor tasks with mixed periodicity has an optimal solution.

[SETTA 2017](#)

Preemptive Uniprocessor EDF Schedulability Analysis with Preemption Costs Considered

C. Deutschbein, S. Baruah

Earliest Deadline First (EDF) scheduling with preemption costs can be reduced to EDF scheduling.

[RTSS 2016](#)

Performance and energy limits of a processor-integrated FFT accelerator

T. Thanh-Hoang, A. Shambayati, C. Deutschbein, H. Hoffmann, A. A. Chien

Heterogenous accelerators can improve average case performance and efficiency at minimal cost in chip area.

[HPEC 2014](#)

Experience

University of North Carolina at Chapel Hill

TEACHING ASSISTANT AND RESEARCH ASSISTANT

- Instructed and developed new curriculum for 2018 Summer Session of COMP 116: Scientific Computing
- Teaching assistant for 2017 Fall and 2018 Spring COMP 410: Data Structures
- Completed coursework and prepared multiple publications (see *Publications*)

[Chapel Hill, NC](#)

2015 - present

Lockheed Martin

SOFTWARE ENGINEER (INTERNSHIP INTO FULL-TIME)

- Validated real-time operating system for Orion spacecraft

[Littleton, CO](#)

2014 - 2015

University of Chicago Computer Science Department

INSTRUCTIONAL STAFF

- Graded programming assignments and tests and held online office hours.
- Developed chiTCP as part of the chi instructional projects framework for UChicago

[Chicago, IL](#)

2013 - 2015

Univesity of Chicago Large Scale Systems Group

UNDERGRADUATE RESEARCHER

- Prepared a publication on heterogenous processing (see *Publications*)

Chicago, IL

2012 - 2015

Seagate Technology

FIRMWARE ENGINEER INTERN

- Tested experimental high density firmware for hard disk drives.

Longmont, CO

2012

Twin Peaks Robotics

PRODUCTION ENGINEER

- Assembled radio robotics controllers.

Longmont, CO

2011

Skills

Languages C/C++, Python, Racket/Scheme, Coq, LaTeX, Matlab, Standard ML/LISP, Haskell, Java, Verilog, x86

Equity & Inclusion

National Association for the Advancement of Colored People (NAACP)

CHAPEL HILL-CARRBORO BRANCH COMMITTEES ON EDUCATION, LABOR, & CRIMINAL JUSTICE

- Organized a student bake sale to raise \$278 for the 2019 Scholarship Fund
- Branch Delegate to State Convention, 2018
- Coding and data analysis for committees, branch, and statewide NAACP

Chapel Hill, NC

2016 - present

North Carolina Public Service Workers Union, UNC Chapter (UE150)

TREASURER, SOLIDARITY COMMITTEE CO-CHAIR

- Support student-led campaigns to remove unsafe Confederate monuments from campus
- Organize workers to gain a living wage for full-time public service workers in North Carolina
- Connect workers on campus with community centers in Chapel Hill-Carrboro
- Manage payroll deductions and member enrollment for a branch of 100+ members

Chapel Hill, NC

2018 - present

Graduate Women in Computer Science at UNC (GWICS)

MALE-IDENTIFYING ALLY

- Support GWICS events, including set-up, research presentations, outreach, and panel moderation
- Connect GWICS members with other departmental affinity groups on campus
- Use male-passing privilege to elevate concerns and needs of GWICS and members

Chapel Hill, NC

2015 - present

Chapel Hill Community Policing Advisory Committee (CPAC)

TOWN COUNCIL APPOINTED MEMBER

- Review and provide analysis on annual and quarterly police reports and event plans
- Equip communities to better understand how Chapel Hill Police Department operates
- Propose changes to end racial disparities in policing Black and Latinx communities

Chapel Hill, NC

2016 - present

Food Security Volunteer & Advocate

VOLUNTEER WITH TABLE NC, WORKERS FEEDING WORKERS, AND MUTUAL AID CARRBORO

Triangle, NC

2017 - present