

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](#)

Teaching

COMP 116: Scientific Computing

INSTRUCTOR

- Taught class, held office hours, and developed a course curriculum

[UNC Chapel Hill](#)

2018

COMP 410: Data Structures and Analysis

(HEAD) TEACHING ASSISTANT

- Graded assignment and exams, held office hours and recitations, and developed new homework assignments

[UNC Chapel Hill](#)

2017 - 2018

CMSC 233: Networks and Distributed Systems

INSTRUCTIONAL STAFF

- Graded programming assignments and exams and held online office hours

[UChicago](#)

2015

CMSC 151: Introduction to Computer Science

INSTRUCTIONAL STAFF

- Graded programming assignments and exams and held online office hours

[UChicago](#)

2014

Work Experience

University of North Carolina at Chapel Hill

RESEARCH ASSISTANT

Chapel Hill, NC

2015 - present

- 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*)

Lockheed Martin

SOFTWARE ENGINEER (INTERNSHIP INTO FULL-TIME)

Littleton, CO

2014 - 2015

- Validated real-time operating system for Orion spacecraft

University of Chicago Chi Instructional Projects

UNDERGRADUATE DEVELOPER

Chicago, IL

2012 - 2015

- Developed the ChiTCP project for CMSC 233: Networks and Distributed Systems

University of Chicago Large Scale Systems Group

UNDERGRADUATE RESEARCHER

Chicago, IL

2012 - 2015

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

Seagate Technology

FIRMWARE ENGINEER INTERN

Longmont, CO

2012

- Tested experimental high density firmware for hard disk drives

Twin Peaks Robotics

PRODUCTION ENGINEER

Longmont, CO

2011

- Assembled radio robotics controllers

Equity & Inclusion

National Association for the Advancement of Colored People (NAACP)

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

Chapel Hill-Carrboro, NC

2016 - present

- Organized a student bake sale to raise \$300+ for the 2019 Scholarship Fund
- Branch Delegate to State Convention, 2018
- Coding and data analysis for committees, branch, and statewide NAACP

Graduate Women in Computer Science at UNC (GWICS)

MALE-IDENTIFYING ALLY

Chapel Hill, NC

2015 - present

- 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

Society of Women Engineers (SWE)

EVENT VOLUNTEER

Colorado

2014 - 2015

- Support SWE members work with GEMS chapters in middle and high schools around Colorado.

Queers & Associates (Q&A)

CIS/HE/IDENTIFYING ALLY

Chicago, IL

2011 - 2015

- Support and learn to better support the University of Chicago's trans students.

Academic Admissions & Advising

Pre-Graduate Advisor

UNIVERSITY CAREER SERVICES

UNC Chapel Hill

2017 - present

- Hold advising office hours for students considering graduate education
- Organize panel events for students consider graduate education
- Support department or university events about post-graduation options

Orientation Advisor

COLLEGE ACADEMIC ADVISING OFFICE

- Student advising to incoming first-year students
- Support advising office during numerous events during Orientation Week and Parents Weekend

[UChicago](#)

2012 - 2015

Alumni Interviewer and Mentor

ALUMNI BOARD OF GOVERNORS

- Meet students interested in UChicago one-on-one for recruitment and admissions
- Advise admitted students and prospective students

[UChicago](#)

2015

Leadership

Treasurer, Solidarity Committee Co-chair

NORTH CAROLINA PUBLIC SERVICE WORKERS UNION, UNC CHAPTER (UE150)

- 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

Town Council Appointed Member

CHAPEL HILL COMMUNITY POLICING ADVISORY COMMITTEE (CPAC)

- 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

Oversight Chair, Senator, Cabinet-level Public Safety Advocate

GRADUATE AND PROFESSIONAL STUDENT FEDERATION

- Investigate racial disparities in Campus Policing and Student Conduct Office
- Write, introduce, and pass resolutions outlining solutions to racial disparities.

[UNC Chapel Hill, NC](#)

2016 - 2019

President

YOUNG DEMOCRATS OF ORANGE COUNTY

- Reorganize chapter to include Black leaders in senior positions on the formerly all-white Executive Board

[Orange County, NC](#)

2018 - 2019

School Board Candidate

CHAPEL HILL-CARRBORO CITY SCHOOLS BOARD OF EDUCATION

- 314 Action endorsee
- People for the American Way Next Up Victory Fund endorsee
- Run For Something endorsee

[Chapel Hill-Carrboro, NC](#)

2017

Awards and Honors

Monument Lab Fellowship

SOCIAL JUSTICE AWARD

[National](#)

2018

People for the American Way Next Up Victory Fund Recipient

SOCIAL JUSTICE AWARD

[National](#)

2017

National Merit Scholar

SCHOLARSHIP

[National](#)

2011 - 2015

University Scholar

SCHOLARSHIP

[University of Chicago](#)

2011 - 2015

Five Star Award Winner

COMMUNITY AWARD

[Lockheed Martin](#)

2014 - 2015

Dean's List

ACADEMIC HONOR

[University of Chicago](#)

2011