

# Erin Carrier

## CONTACT

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## SKILLS

### Programming Languages

Python • Java • C • C++

### Libraries and APIs

NumPy • SciPy • Matplotlib •

MPI • OpenMP • CUDA •

Charm++

### Software and Tools

Git • LaTeX

## COURSEWORK

Numerical Analysis

Parallel Numerical Algorithms

Machine Learning

Applied Machine Learning

High-Performance Computing

Scientific Visualization

Graphical Models

Numerical Methods for PDEs

Iterative and Multigrid Methods

Parallel Prog. w/ Migratable Objs.

Designing Apps. for Extreme

Scale Systems

## AWARDS

2018 - CS @ Illinois Grace

Hopper Travel Grant

2015 - Outstanding TA

2012 - Outstanding Senior in CS

2012 - Outstanding

Undergraduate in CS

## ACTIVITIES

2015-16 | Grad Study Committee

2012-13 | Research Project, GVSU

CUDA accelerated signal-

processing toolkit

2010-12 | GVSU ICPC

Programming Team

## EDUCATION

### University of Illinois at Urbana-Champaign

Expected Completion Feb 2019 | Urbana-Champaign, IL

- PhD in Computer Science, Scientific Computing Research Area
- Advisor: Michael T. Heath
- GPA: 4.0/4.0

### Grand Valley State University

Graduated Apr 2013 | Allendale, MI

- BS in Computer Science, Minor in Mathematics
- GPA: 3.989/4.0

## TEACHING EXPERIENCE

### Lead Teaching Assistant (Numerical Methods), University of Illinois

Aug 2018 - Present | Aug 2017 - May 2018

- Lead TA for course with approximately 450 total students
- Oversee team of 10-15 TAs and CAs and completion of work

### Teaching Assistant (Numerical Analysis), University of Illinois

Aug 2016 - May 2017 | Aug 2014 - May 2015

- Held office hours and interfaced with students regarding issues
- Prepared assignments and quizzes
- Coordinated exams with computer-based testing facility

### Teaching Assistant (Numerical Methods), University of Illinois

Aug 2015 - May 2016 | Aug 2013 - May 2014

- Held office hours and interfaced with students regarding issues
- Prepared assignments, exams, and quizzes

## RESEARCH & PROFESSIONAL EXPERIENCE

### Research Assistant, University of Illinois

June 2018 - Aug 2018 | May 2017 - July 2017 | May 2015 - July 2015

- Investigated sampling-based method for solving linear systems
- Erin Carrier and Michael T. Heath. A Sampling-based Method for Solving Linear Systems. Submitted to SIAM J. Sci. Comput.

### Graduate Intern, Risk and Reliability Analysis, Sandia National Labs

May 2016 - Aug 2016

- Improved HyRAM, a toolkit for Hydrogen risk assessment
- Profiled code and decreased runtime and identified and corrected bugs
- Documented numerical methods used in HyRAM
- KM Groth, ES Hecht, JT Reynolds, ML Blaylock, EE Carrier. Methodology for assessing the safety of Hydrogen Systems: HyRAM 1.1 Technical Reference Manual. Sandia Technical Report SAND2017-2998. March 2017

### Graduate Research Assistant, Los Alamos National Laboratory

May 2014 - Aug 2014

- Worked as member of six student, interdisciplinary team
- Implemented tile-based adaptive mesh refinement
- Compared performance for various runtime systems

### IT Intern, Jackson National Life Insurance Company

May 2011 - Aug 2011

- Designed and documented additions to current website and database