

Erin Carrier

CURRENT POSITION-----

Assistant Professor, Grand Valley State University

Aug 2019 - Present

✦ Teaching:

- CIS 241 – System-level Programming and Utilities
- CIS 101 – Thriving in Our Digital World

Fall 2019

Fall 2019

EDUCATION-----

University of Illinois Urbana-Champaign

Graduated: May 2019

✦ PhD: Computer Science

✦ Research Area: Scientific Computing

Grand Valley State University, Allendale, MI

Graduated: April 2013

✦ Bachelor of Science: Computer Science

✦ Minor: Mathematics

TEACHING EXPERIENCE-----

Teaching Assistant (Python for Data), University of Illinois

Mar 2019 – May 2019

✦ Assist with development of material for new course

✦ Aid students during interactive portions of class time

✦ Monitor Piazza, attendance, and completion of activities

Lead Teaching Assistant (Numerical Methods), University of Illinois

Aug 2018 – Dec 2018

✦ Lead TA for course with approximately 450 total students

✦ Oversee team of 10-15 teaching and course assistants

✦ Organize duties and schedule and oversee completion of work

Lead Teaching Assistant (Numerical Methods), University of Illinois

Aug 2017 – May 2018

✦ Lead TA for class with approximately 400 total students

✦ Interfaced with students regarding issues

✦ Oversaw team of 8-10 teaching and course assistants

✦ Organized task schedule and oversaw deadlines

Teaching Assistant (Numerical Analysis), University of Illinois

Aug 2016 – May 2017

✦ Held office hours and interfaced with students regarding issues

✦ Coordinated exams with CBTF and prepared exams and quizzes

Teaching Assistant (Numerical Methods), University of Illinois

Aug 2015 – May 2016

✦ Interfaced with students regarding issues

✦ Held office hours

✦ Created assignments and exams

Teaching Assistant (Numerical Analysis), University of Illinois

Aug 2014 – May 2015

✦ Held office hours

✦ Created homework assignments

Teaching Assistant (Numerical Methods), University of Illinois

Aug 2013 – May 2014

✦ Held office hours

✦ Created exams and homework assignments

RESEARCH & PROFESSIONAL EXPERIENCE-----

- PhD Student, University of Illinois Aug 2013 – May 2019
- ✦ Thesis Title: Exploiting Compression when Solving Discretized Linear Systems
 - ✦ Advisor: Michael Heath
 - ✦ Investigating a compression-based method for solving linear system
 - ✦ Examining performance for variety of 1D and 2D test problems
 - ✦ Exploring how choice of basis and choice of discretization affect performance
 - ✦ Research assistant (spring 2019, summer 2018, summer 2017, summer 2015)
- 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 code runtime
 - ✦ Performed code verification and identified and fixed bugs
 - ✦ Documented numerical methods used by HyRAM
- Graduate Research Assistant, Los Alamos National Laboratory May 2014 – Aug 2014
- ✦ Participant in LANL Co-Design Summer School
 - ✦ Worked as part of a six student, interdisciplinary team
 - ✦ Implemented tile-based adaptive mesh refinement
 - ✦ Compared various runtime systems
- Research Project (Group), Grand Valley State University May 2012 – May 2013
- ✦ Topic: PyGASP: Python-based GPU-accelerated signal processing
 - ✦ Advisor: Dr. Greg Wolffe
 - ✦ Worked in the Distributed Execution Network Lab (DEN)
 - ✦ Developed a signal-processing toolkit accelerated using PyCUDA
 - ✦ Investigated possible scientific applications

PUBLICATIONS-----

- Erin Carrier and Michael T. Heath. Computing compressed solutions for discretized linear systems. In preparation
- R. C. Brost, E. E. Carrier, M. J. Carroll, K. M. Groth, W. P. Kegelmeyer, V. J. Leung, H. E. Link, A. J. Patterson, C. A. Phillips, S. Richter, D. Robinson, A. Staid, D. M.-K. Woodbridge. Adverse event prediction: using graph-augmented temporal analysis: final report. Sandia Technical Report SAND 2018-11123. October 2018
- K.M. Groth, E.S. Hecht, J.T. Reynolds, M.L. Blaylock, E.E. Carrier. Methodology for assessing the safety of Hydrogen systems: HyRAM 1.1 technical reference manual. Sandia Technical Report SAND2017-2998. March 2017
- N. Bowman, E. Carrier and G. Wolffe, "PyGASP: Python-based GPU-accelerated signal processing," *IEEE International Conference on Electro-Information Technology*, EIT 2013, Rapid City, SD, 2013, pp. 1-6. May 2013

CONFERENCE TALKS-----

- A Sampling-based Method for Solving Linear Systems March 2018
15th Copper Mountain Conference on Iterative Methods
Copper Mountain, CO
- PyGASP: Python-based GPU-Accelerated Signal Processing May 2013
2013 IEEE Intern. Conference on Electro/Information Technology
Rapid City, SD

HONORS AND AWARDS-----

CS @ Illinois Grace Hopper Travel Grant	Fall 2018
Outstanding Teaching Assistant	Fall 2015
Outstanding Senior in Computer Science	Spring 2012
Outstanding Undergraduate in Computer Science	Spring 2012
Member of Upsilon Pi Epsilon Honor Society	Inducted: Fall 2011
Member of Phi Kappa Phi Honor Society	Inducted: Spring 2011

ACTIVITIES-----

Member of Graduate Study Committee	Fall 2015 – Spring 2016
Grand Valley State University ICPC Programming Team	Fall 2010 – Fall 2012
Study Abroad in Paros, Greece	Summer 2010

SKILLS-----

Programming Languages

✧ Python ✧ Java ✧ C / C++

Libraries and Parallel Programming Paradigms

✧ NumPy ✧ SciPy ✧ Matplotlib
✧ MPI ✧ OpenMP ✧ CUDA ✧ Charm++

Software and Tools

✧ Git ✧ LaTeX