

Education

- Aug 2015 **Georgia Institute of Technology, Atlanta, GA.**
May 2019 B.S. in Computer Science.
Graduated with Highest Honors
- Sept 2014 **Princeton University, Princeton, NJ.**
May 2015 Visiting High School Student
Courses: Algorithms and Data Structures, Theory of Algorithms

Research Experience

- Nov 2015 **Research Assistant, High Performance Computing Lab, Georgia Institute of Technology.**
May 2019
 - Researched streaming graph algorithms under Dr. Oded Green and Prof. David Bader.
 - Designed parallel algorithms for k -core, Point-to-Point Shortest Path problem, and Betweenness Centrality problems.
 - Conducted experiments on algorithms on high-performance systems using *C/C++*, *OpenMP*, *METIS*, *Infomap*, *CUDA*.
- Jun 2017 **Research Intern, École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland.**
Aug 2017
 - Worked under Prof. Willy Zwanepoel and Jasmina Malicevic in the Operating Systems Laboratory of EPFL.
 - Developed a memory layout for graphs that improved cache locality and NUMA-awareness.
 - Ran experiments using the new memory layout for algorithms (e.g. PageRank, BFS) with *C/C++*, *Cilk(Plus)*, *OpenMP*.
- Jun 2016 **Research Intern, Sandia National Laboratories, Livermore, CA.**
Aug 2016
 - Implemented distributed cache coherency protocol using *Go*.
 - Automated function summary generation for symbolic execution using *Python*, *angr*.

Publications

- 2018 A. Tripathy, O. Green. **Scaling Betweenness Centrality in Dynamic Graphs.** *IEEE High Performance Extreme Computing (HPEC) 2018*, Waltham, MA
- 2018 A. Tripathy, F. Hohman, D. H. Chau, O. Green. **Scalable K-Core Decomposition for Static Graphs Using a Dynamic Graph Data Structure.** *IEEE International Conference on Big Data 2018*, Seattle, WA
- 2018 **[Innovation Award]** O. Green, J. Fox, A. Watkins, A. Tripathy, K. Gabert, E. Kim, Xiaojing A., K. Aatish, D. Bader. **Logarithmic Radix Binning and Vectorized Triangle Counting.** *IEEE High Performance Extreme Computing (HPEC) 2018*, Waltham, MA
- 2018 A. Tripathy, O. Green. **Accurately and Efficiently Estimating Dynamic Point-to-Point Shortest Path.** Senior Thesis.

Teaching Experience

- Jan 2016 **Teaching Assistant, Data Structures and Algorithms (CS 1332), Georgia Institute of Technology.**
present
 - Led weekly recitations, office hours, designed, proctored, and graded exams.
 - Senior TA: handled recitation guides for TAs, exams/practice exams, plagiarism detection, and delegated tasks to 27 TAs.

Industry Experience

- May 2018 **Software Engineer Intern, Facebook, Menlo Park, CA.**
Aug 2018
 - Designed and wrote cache to speed up internal tool used for ads integrity by orders of magnitude in *C++*.
 - Wrote web app to automate and accelerate workflow for engineers on the team.
- Feb 2015 **Software Engineer Intern, Bloomberg L.P., Princeton, NJ.**
Jun 2015
 - Worked in the design and implementation of framework for representing PDF files internally.
 - Wrote machine learning software now in Bloomberg's production environment using *Java*, *Weka*.

Skills

- Languages Java, C/C++, CUDA, Python, Hack, Bash, Verilog, Go
Tools OpenMP, Cilk/Cilk Plus, OpenMPI, \LaTeX , Linux, Vim, Git, METIS, Infomap, perf, IDA Pro, angr, Weka

Honors

- 2018 **PURA Travel Award, Georgia Institute of Technology.**
President's Undergraduate Research Award to travel to IEEE HPEC 2018 and IEEE Big Data 2018.
- 2018 **Google Games 1st Place, Atlanta, GA.**
1st out of 27 teams in Atlanta area in algorithmic programming competition.
- 2015 **Computer Security Awareness Week (CSAW) Capture-the-Flag, New York University.**
13th Nationally in College Division for computer security competition.
- 2015 **Codegate Capture-the-Flag, Seoul, South Korea.**
17th Internationally in HS Division for computer security competition as part of the CODEGATE conference.