

## RESEARCH AREAS

Fast methods for partial differential equations, spectral methods, *hp* element methods, computational fluid & solid mechanics, and multigrid methods

## EDUCATION

<b>Harvard University</b> Ph.D. in Applied Mathematics M.S. in Applied Mathematics Advisors: Chris Rycroft, Alex Townsend	2015–2020
<b>Tufts University</b> B.S. in Mathematics, Computer Science Honors: <i>summa cum laude</i> , Highest Honors in Thesis Advisor: Christoph Börgers	2009–2013

## PROFESSIONAL EXPERIENCE

<b>Flatiron Institute</b> <i>Research Associate</i>	New York, NY Summer 2019
<b>Lawrence Berkeley National Laboratory</b> <i>Affiliate</i>	Berkeley, CA Summer 2017
<b>Walt Disney Animation Studios</b> <i>Graduate Associate</i>	Burbank, CA Summer 2016
<b>Wolfram Research</b> <i>Developer</i> <i>Junior Developer</i>	Somerville, MA 2014–2015 2013–2014
<b>Apple Inc.</b> <i>Software Engineering Intern</i>	Cupertino, CA Summer 2012

## AWARDS & HONORS

Leslie Fox Prize (second place) <i>Institute of Mathematics and its Applications</i>	2019
Copper Mountain Student Paper Competition Winner <i>19th Copper Mountain Conference on Multigrid Methods</i>	2019
Certificate of Distinction in Teaching <i>Harvard University</i>	2018
National Defense Science & Engineering Graduate Fellowship <i>U.S. Air Force Research Laboratory</i>	2016–2019
Phi Beta Kappa Society <i>Tufts University</i>	2013

Ralph S. Kaye Memorial Prize <i>Tufts University</i>	2013
Benjamin G. Brown Scholarship <i>Tufts University</i>	2013

## JOURNAL PUBLICATIONS

- [4] D. FORTUNATO, N. HALE, AND A. TOWNSEND, *The ultraspherical spectral element method*, submitted (2020).
- [3] D. FORTUNATO, C. RYCROFT, AND R. SAYE, *Efficient operator-coarsening multigrid schemes for local discontinuous Galerkin methods*, SIAM J. Sci. Comput., 41(6), A3913–A3937 (2019), <https://doi.org/10.1137/18M1206357>.
- [2] D. FORTUNATO AND A. TOWNSEND, *Fast Poisson solvers for spectral methods*, to appear in IMA J. Numer. Anal. (2019), <https://doi.org/10.1093/imanum/drz034>.
- [1] A. MIJAILOVIC, B. QING, D. FORTUNATO, AND K. VAN VLIET, *Characterizing viscoelastic mechanical properties of highly compliant polymers and biological tissues using impact indentation*, Acta Biomaterialia, 71, 388–397 (2018), <https://doi.org/10.1016/j.actbio.2018.02.017>.

## PRESENTATIONS

Sidney Fernbach Fellowship Seminar, Lawrence Livermore National Laboratory	February 2020
Numerical Methods for Partial Differential Equations Seminar, MIT	December 2019
Numerical Analysis Seminar, Flatiron Institute	July 2019
28th Biennial Numerical Analysis Conference, Glasgow, UK	June 2019
19th Copper Mountain Conference on Multigrid Methods, Copper, CO	March 2019
SIAM Conference on Computational Science and Engineering, Spokane, WA	February 2019
Scientific Computing and Numerical Analysis Seminar, Cornell University	November 2018
ICOSAHOM 2018, London, UK	July 2018
SIAM Conference on Computational Science and Engineering, Atlanta, GA	February 2017
SIAM Student Chapter, Tufts University	November 2014

## TEACHING EXPERIENCE

### Harvard University, *Teaching Fellow*

- AM 205: Advanced Scientific Computing: Numerical Methods I      Fall 2019
- AM 225: Advanced Scientific Computing: Numerical Methods II      Spring 2018

### Tufts University, *Teaching Assistant*

- COMP 170: Computation Theory      Spring 2012
- COMP 15: Data Structures      Spring 2011
- COMP 11: Introduction to Computer Science      Fall 2010

## SKILLS

*Languages:* C++11, C, MATLAB, Mathematica, Python, L<sup>A</sup>T<sub>E</sub>X  
*Technologies:* BLAS, LAPACK, Git, CVS, OpenMP