## RESEARCH AREAS

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

# **EDUCATION**

Harvard University 2015 - 2020Ph.D. in Applied Mathematics M.S. in Applied Mathematics Advisors: Chris Rycroft, Alex Townsend 2009 - 2013**Tufts University** 

B.S. in Mathematics, Computer Science

Honors: summa cum laude, Highest Honors in Thesis

Advisor: Christoph Börgers

# PROFESSIONAL EXPERIENCE

Flatiron Institute Flatiron Research Fellow Research Associate	New York, NY 2020-present Summer 2019
${\color{red} \textbf{Lawrence Berkeley National Laboratory}} \\ {\color{red} \textit{Affiliate}}$	Berkeley, CA Summer 2017
Walt Disney Animation Studios Graduate Associate	Burbank, CA Summer 2016
Wolfram Research  Developer  Junior Developer	Somerville, MA 2014–2015 2013–2014
Apple Inc. Software Engineering Intern	Cupertino, CA Summer 2012

# AWARDS & HONORS

WARDS & HONORS	
Leslie Fox Prize for Numerical Analysis (Second Prize)  Institute of Mathematics and its Applications	2019
Copper Mountain Student Paper Competition Winner  19th Copper Mountain Conference on Multigrid Methods	2019
Certificate of Distinction in Teaching  Derek Bok Center, Harvard University	2018
National Defense Science & Engineering Graduate Fellowship $U.S.\ Air\ Force\ Research\ Laboratory$	2016-2019
Phi Beta Kappa Society	2013

Tufts University

Ralph S. Kaye Memorial Prize

Tufts University

Benjamin G. Brown Scholarship

Tufts University

## JOURNAL PUBLICATIONS

[4] D. FORTUNATO, N. HALE, AND A. TOWNSEND, The ultraspherical spectral element method, submitted (2020), https://arxiv.org/abs/2006.08756.

2013

2013

- [3] D. FORTUNATO, C. RYCROFT, AND R. SAYE, Efficient operator-coarsening multigrid schemes for local discontinuous Galerkin methods, SIAM J. Sci. Comput., 41 (2019), pp. A3913–A3937, https://doi.org/10.1137/18M1206357.
- [2] D. FORTUNATO AND A. TOWNSEND, Fast Poisson solvers for spectral methods, IMA J. Numer. Anal., 40 (2019), pp. 1994–2018, 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 Biomater., 71 (2018), pp. 388–397, https://doi.org/10.1016/j.actbio.2018.02.017.

#### **PRESENTATIONS**

SIAM Conference on Computational Science and Engineering, Fort Worth, TX	March 2021
Canadian Mathematical Society Winter Meeting	December 2020
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: A	Advanced Scientific	Computing:	Numerical Methods I	Fall 2019
•	AM 225: A	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, LATEX

Technologies: BLAS, LAPACK, Git, OpenMP