

# Steven Roberts

✉ steven94@vt.edu • 🌐 steven-roberts.github.io • 📄 Steven-Roberts

## Education

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### Virginia Tech

*Ph.D. Student in Computer Science, 3.97 GPA*

*Fall 2016 – present*

### Virginia Tech

*B.S. in Computer Science and B.S. in Mathematics, 3.98 GPA*

*Fall 2012 – Spring 2016*

Highest GPA in both graduating classes

## Skills and Qualifications

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**Programming Languages:** Proficient in MATLAB and Mathematica, experienced with C (including OpenMP and MPI), CUDA, C++, C#, Python, and Java

**Mathematics:** Strong background in linear algebra, numerical analysis, and differential equations

**Web Development:** Experienced in HTML, ECMAScript 2018, Node.js, CSS, SASS, and creating Chrome Extensions

**Databases:** Experienced with SQL databases and basic querying

## Work History

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### Lawrence Livermore National Laboratory

*Intern*

*Summer 2018*

- Implemented and optimized finite element operations for GPUs using CUDA
- Achieved 10 to 100 times speedup over other CPU and GPU implementations
- Contributed to the open-source project libCEED

### Virginia Tech Computational Science Laboratory

*Research Assistant*

*Spring 2015 – present*

- Deriving, implementing, and testing new multirate time integrators for numerically solving differential equations

### NASA Glenn Research Center

*Intern*

*Summer 2017*

- Developed 1D hybrid direct kinetic simulation of a Hall thruster in C++

### Insurance Institute for Highway Safety

*Intern*

*Summer 2013 – 2016*

- Developed software in C#, much of which interacted with SQL databases
- Helped to develop several IIHS websites, which are visited by thousands daily

### Web Developer

*Freelance*

*2016 – present*

- Designed and created websites for two VT Materials Science and Engineering professors' research groups
- Developed four Chrome Extensions used by more than 75,000 users

### Virginia Tech

*Undergraduate Teaching Assistant*

*Fall 2014*

- Assistant for Software Design & Data Structures class (CS 2114)
- Held weekly office hours to help students with assignments
- Helped supervise two labs with approximately 30 students each

## Volunteer Work and Involvement

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**Fall 2017 – Fall 2018:** Volunteer for VT CSRC Career Fair

**2016:** Volunteer Math Tutor for Teacher Praxis Preparation

**2013 – 2015:** Galipatia Academic Committee Member

## Recognitions and Accomplishments

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**2018:** Virginia Space Grant Consortium Graduate STEM Research Fellowship Recipient

**2017:** Davenport Fellowship Recipient

**2016 – present:** Member of Phi Beta Kappa Honor Society

**2016:** Winner of VT David Heilman Memorial Award for Outstanding Undergraduate Research

**2016:** Pivot Point Hackathon - Third place

**2014 – 2016:** Winner of VT CS Sophomore, Junior, and Senior Scholar Awards

**2012 – 2016:** VT Dean's List with Distinction

## Publications

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- [1] Steven Roberts, Arash Sarshar, and Adrian Sandu. Coupled multirate infinitesimal gark schemes for stiff systems with multiple time scales. *arXiv preprint arXiv:1812.00808*, in preparation 2018.
- [2] Arash Sarshar, Steven Roberts, and Adrian Sandu. Design of high-order decoupled multirate gark schemes. *arXiv preprint arXiv:1804.07716*, submitted 2018.