

Brooks Mershon

<http://brooksmershon.com>
mershon.brooks@gmail.com | 215.595.3694

EDUCATION

DUKE UNIVERSITY

BS IN COMPUTER SCIENCE

Expected May 2016 | Durham, NC

Cum. GPA: 3.7 / 4.0

Duke Cycling Team Member

NEW YORK UNIVERSITY

Writers in New York 2014

PENNSBURY HIGH SCHOOL

Valedictorian | Fairless Hills, PA

LINKS

Github:// [bmershon](#)

bl.ocks:// [bmershon](#)

LinkedIn:// [bmershon](#)

Twitter:// [@bgmershon](#)

Flickr:// [b_mershon](#)

COURSEWORK

Selected Favorites:

Euclidean and Non-Euclidean Geometry

Topology with Applications

GIS and Geospatial Analysis

Linear Optimization / Game Theory

Database Systems

Intellectual Property Law

Public Speaking

Digital 3D Geometry

Statistical Inference

SKILLS

PROGRAMMING

JavaScript (ES6) • D3 • Git • Make

HTML • CSS • \LaTeX

Familiar:

Python • Java • R • PostgreSQL

Chrome extension architecture

SOFTWARE

Familiar:

Adobe Illustrator • Cinema4D

MANUAL

RC model aviation (10 years)

Pursuing private pilot license

(CAP Cessna 172, 139+ landings, solo flight)

Digital photography (DSLR)

EXPERIENCE

THE WASHINGTON POST | GRAPHICS INTERN

June 2015 - August 2015 | Washington, D.C.

- Designed graphics for print and online publication using Adobe Illustrator.
- Developed an automated pipeline using Makefiles for rendering a map from shapefiles and tabular data.
- Worked on a modular library that helps manage the D3.js projection pipeline for maps with one or more layers of geometry.
- Developed an interactive 3D globe for visualizing nuclear testing.

DUKE UNIVERSITY PRESS | BOOKS EDITORIAL INTERN

Jan 2015 - May 2015 | Durham, NC

VERSAL | SOFTWARE ENGINEERING INTERN

May 2013 - Aug 2013 | San Francisco, CA

- Versal is an educational technology platform focused on bringing highly interactive education to the web.
- Developed simulations related to optics, epidemiology, image processing, and geometry as the company launched.

PROJECTS

LAPLACIAN MESH PROCESSING | DIFFERENTIAL GEOMETRY

April 2016 | Duke University

EQUIDECOMPOSING POLYGONS | A FUN D3 PLUG-IN

March 2016 - Present | Duke University

Decompose one shape into another shape of equal area.

PROCRUSTES ALIGNMENT | ALGORITHM ANIMATION

March 2016 | Duke University

Procrustes Alignment for two point clouds using Chris Tralie's mesh library.

3D SPECULAR REFLECTIONS | INTERACTIVE SIMULATION

February 2016 | Duke University

Using a WebGL rendering engine written by Chris Tralie, I implemented functions that calculate image sources, generate reflection paths, create an impulse response, and compute axis-aligned bounding boxes for speeding up ray-tracing.

WIKIBLOCKS | WIKIPEDIA AND VISUALIZATION

Sept 2015 - Dec 2015 | Duke University

Developed a fully-functioning prototype Chrome extension and backend system that finds relevant visualizations for a STEM-related Wikipedia article. Set up and benchmarked AWS server.

TEACHING TOPOLOGY WITH CODE | MATH + CODE

Sept 2014 - Dec 2014 | Duke University

Built several interactive pedagogical tools using D3 for a course in computational topology. Wrote a well-received paper reflecting on the design process and thoughts for improving the way upper-level math is taught using code.