Brooks Mershon

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

EDUCATION

DUKE UNIVERSITY
BS in Computer Science
May 2016 | Durham, NC
Cum. GPA: 3.74 / 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
TypeScript • JavaScript (ES6) • D3
Git • Make
HTML • CSS • LaTeX
Familiar:
C++ • 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

TRIMBLE | Software Engineer
July 2016 - Present | Boulder, CO
- Working on the SketchUp team.

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.