Stephen Thompson

Chicago, IL
(410) 688-1617
stephen.thompson@umbc.edu

About me

I am a full-stack web developer living in Chicago, with a PhD in applied mathematics. I love building web applications and am excited to apply my coding skills, together with my strong analytical background, in the private sector after several years of teaching. For fun, I like to go on bike rides with my wife Kate.

Links

Professional Portfolio:
`https://sgthompson.herokuapp.com`

GitHub Page:
`https://github.com/SThompsonChicago`

LinkedIn:
`https://www.linkedin.com/in/stephen-thompson-77511174/`

Skills

Web Development
I am a full-stack web developer, comfortable with the MERN stack, JavaScript, Node, Express, React, MySQL, Handlebars, AJAX, Git, HTML, CSS, jQuery, MongoDB, NoSQL and GraphQL.

Mathematics
I have a strong background in differential equations, linear algebra, mathematical modeling and real analysis. I also have past experience in optimization, numerical analysis, numerical linear algebra and probability theory.

Communication
I have excellent verbal communication skills from spending several years teaching. I also have excellent written communication skills and have published several scholarly articles in peer-reviewed journals.

Education

Certificate, Full-Stack Web Development
Northwestern University, 2021

Doctor of Philosophy, Applied Mathematics
University of Maryland, Baltimore County (UMBC), 2013

Bachelor of Arts, Mathematics
University of Maryland, Baltimore County, 2008

Projects

Epidemic Simulator

This is a single-page web application that I created using ReactJS. It solves a system of 400 nonlinear differential equations and displays the results as an animation in real time, as the equations are being solved. The equations model the spread of a disease. The user is able to choose different model inputs—including the population distribution function, the initial outbreak location, the way people move between locations, the effective transmission rate for the disease and the recovery rate—and see how this changes the results.

Link to deployed application:
`https://sthompsonchicago.github.io/pandemic-simulator/`
Link to GitHub repository:
`https://github.com/SThompsonChicago/pandemic-simulator/`

Book Talk

This is a full-stack web application that allows users upload and share book reviews with friends online. The aim is to make reading a more interactive and social experience. The application was created using Node, Express, Handlebars and MySQL.

Link to deployed application:
`https://book-club-chicago.herokuapp.com/`
Link to GitHub repository:
`https://github.com/SThompsonChicago/book-club`

Career Planner

This web application helps the user plan a career in the nonprofit industry by looking up a list of nonprofits (and other relevant information) for a chosen city. It uses JavaScript DOM manipulation and third-party APIs to accomplish this.

Link to deployed application:
`https://sthompsonchicago.github.io/Nonprofit-Career-Planner/`
Link to GitHub repository:
`https://github.com/SThompsonChicago/Nonprofit-Career-Planner`

Professional Experience

Part-time instructor 2015-2021
University of Maryland, Baltimore County
1000 Hilltop Circle
Baltimore, MD 21250
Courses taught: partial differential equations (Math 404, four times), linear algebra (Math 221, seven times), differential equations (Math 225, three times), multivariable calculus (Math 251, three times) and geometry (Math 306). Also worked as an academic advisor for new students.

High School Teacher 2019-2020
Baltimore City Public Schools
200 E. North Ave
Baltimore, MD 21210
Courses taught: Algebra II and College Readiness Mathematics.

Affiliate Faculty 2017-2019
Loyola University, Maryland
4501 N. Charles St.
Baltimore, MD 21210
Courses taught: Applied Calculus (MA151, once), Calculus I (MA251, twice), Calculus II (MA252, three times).

Collective member 2017-2019
Alternative Press Center
2239 Kirk Ave.
Baltimore, MD 21218
I helped write and edit the Alternative Press Index, which is carried by many academic libraries and is published twice per year.

Part-time instructor 2014-2016
Community College of Baltimore County
10300 Grand Central Ave
Owings Mills, MD 21117
Courses taught: statistics (Math 153, two times), college algebra (Math 163, three times), and high school algebra (Math 081, 082 and 083).

Teaching Assistant 2008-2013
University of Maryland, Baltimore County
Courses taught: calculus I (Math 151), calculus II (Math 152), and precalculus (Math 150).

Selected publications

Thompson, S. 2021. "'The total movement of this disorder is its order': Investment and utilization dynamics in long-run disequilibrium." *Accepted for publication*.

Thompson, S. 2020. "Growth, external markets and stock-flow norms: a Luxemburg-Godley model of accumulation." *Cambridge Journal of Economics* 44(2): 417-443.

Thompson, S.: 2014. "Convergence of nonlocal diffusion models on lattices." *Journal of Mathematical Analysis and Applications* 415: 1-13.

Thompson, S. and Seidman, T. I. 2013. "Approximation of a Semigroup Model of Anomalous Diffusion in a Bounded Set." *Evolution Equations and Control Theory* 2: 173-192.

Thompson, S. 2010. "An Extension of Browder's Non-Ejective Fixed Point Theorem," *Fixed Point Theory* 11: 143-146.

Service

Volunteer Tutor 2013
Goucher Prison Education Partnership
I tutored students at the mens' prison in Jessup, Maryland.

Member, Fair Labor Standards Advisory Group 2009
University of Maryland, Baltimore County
This group reviewed labor issues at factories that produce UMBC's university-logo apparel. The group was appointed by the university president. As a member, I helped convince the administration to affiliate with the Worker Rights Consortium.

Award

Recognized for outstanding mathematics research in 2012 by the College of Natural and Mathematical Sciences, UMBC.

References

Available upon request.