January 2020

Joseph Michael Spitzer

Computer Science Graduate Student

electronic mailing address

cellular telephone number

Education

- **University of Massachusetts** — Amherst, MA
  M.S./Ph.D. Computer Science (3.955) — 2018 - Present
  - *Selected Courses*: Algorithms, Cryptography, and Programming Languages.
- **University of Saint Thomas** — Saint Paul, MN
  B.A. Computer Science (4.00) & B.A. Mathematics (3.75) — 2010 - 2015
  - Magna Cum Laude graduate with a cumulative GPA of 3.89.

Employment (Academia)

- **Graduate Research Assistant (September 2018 - Present)** A member of the research labs studying programming languages and software engineering. Most recently collaborated with a robotics group to augment an existing robot infrastructure with the ability to program via JavaScript and view a simulator in the browser. Currently examining the effectiveness of a JavaScript language-level implemented to enhance development, particularly among students.
- **Undergraduate Teaching Assistant (Fall 2014 & Spring 2015)** Graded homework and held office hours to provide assistance to students as needed. Worked with a Linear Algebra section in the fall and a Discrete Mathematics section in the spring.
- **Computer Science Tutor (September 2013 - May 2015)** Assisted students with programming in the context of Java and JavaScript, both debugging and understanding concepts.
- **Undergraduate Research Assistant (January 2011 - January 2015)** Regarding computational knot theory; involved problem-solving and scripting skills. Particular projects included the explicit characterization of tight knot configurations and working toward the discovery of new knotting patterns in folded proteins. Presented results on seven occasions, with emphasis on student poster sessions at the 2014 (Baltimore) & 2015 (San Antonio) Joint Mathematics Meetings.

Employment (Industry)

- **Software Engineer II at Veritas Technologies (June 2017 - August 2018)** Continued responsibilities as a recognized subject-matter expert concerning technicalities of our web client. Co-lead the front-end community of practice, a cross-site collaborative development group. Transitioned to application middleware development on CloudPoint™; multi-cloud data management software which sought to aggregate control of heterogeneous public cloud environments. Worked to assist in the restructure of the API gateway in Node.js, for consumption by customers and improved scalability.
- **Software Engineer I at Veritas Technologies (June 2015 - May 2017)** Front-end JavaScript developer on Veritas Velocity™, a distributed copy data management application. Velocity sought to streamline control of Oracle snapshots; allowing database administrators convenient automation and application developers the ability of self-service. Responsible for integrating with back-end web services on features such as role-based access control and point-in-time scheduling configuration, in order to deliver a robust interface for customers.

Publications

- **Joseph Spitzer**, Joydeep Biswas, and Arjun Guha. *Making High-Performance Robots Safe and Easy to Use for an Introduction to Computing.* Educational Advances in Artificial Intelligence (EAAI), 2020.
- Abhinav Jangda, Donald Pinckney, Yuriy Brun, and Arjun Guha. *Formal Foundations of Serverless Computing.* ACM SIGPLAN Conference on Object Oriented Programming, Systems, Languages and Applications (OOPSLA), 2019. Acknowledgment: **Joseph Spitzer**.
- **Joseph Spitzer**, Kate Lockwood, and Jason Sawin. *Harnessing the Power in Your Pocket.* IBM Center for Advanced Studies Conference on Computer Science and Software Engineering (CASCON), 2015.

Presentations

- **Veritas Cutting Edge (November 2016)** Gave a technical talk entitled *JavaScript: The Cutting-Edge Parts* at our annual internal engineering conference. Presentation highlighted principles of JavaScript development such as dynamic typing and functional programming, prior to providing an overview of language features introduced in ECMAScript 6.
- **IBM CASCON Emerging Technologies Track (November 2015)** Based on publication, which sought to explore the architectural and design implications of utilizing unused cycles on employee company-issued mobile devices, much like SETI@home© does with personal computers, to process business intelligence data.
- **Symantec NetBackup™ Customer Forum (September 2015)** Forum was open to technical staff from companies who are customers or partners of NetBackup™, the corporation's flagship product. Assisted a product manager and user-interface researcher in configuring a demo environment and orchestrating a walk-through of an upcoming new product.

Service

- **Outreach Workshop in Partnership with Holyoke Codes (July 2019)** Engineered a robot programming platform and utilized it to teach high-school students computing principles and robotics for a week.
- **Veritas University Relations Team (June 2016 - August 2018)** Visited college campuses, as well as high-schools, to discuss professional aspects of the technology industry and champion the importance of computer science education.
- **Disability Resources Student Assistant (Fall 2012, Fall 2013, & Fall 2014)** Took careful notes for those with learning deficiencies in Introduction to Programming and Web Development. Scribed on the behalf of a blind student for Data Structures exams.

Honors

- **National Society of Collegiate Scholars Induction (April 2012)** A non-profit honors organization for collegiate students accredited with the Association of College Honor Societies.

- **Boys State (June 2009)** Week-long leadership and citizenship program sponsored by the American Legion for those nominated by their high school.

Technical Skills

- **Languages/Frameworks:** JavaScript, AngularJS, Jasmine, Jest, Protractor, Restify, TypeScript, HTML5, CSS, Java, LaTeX
- **Environments/Tools:** Babel.js, Bash, Firefox, Git/GitHub, Google Cloud Platform (Cloud Functions/Storage), JSHint/ESLint, Node.js/NPM, Travis CI, Unix (CentOS/Ubuntu/macOS)
- **Concepts/Protocols:** Protocol Buffers, JSON, DOM, MVC, HTTP, WS, REST/SOAP, UML