

Dina Buric

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360-393-0100

Full-stack software developer with several years of industry experience, using my mathematical background to accelerate the business forward and delight users along the way.

Tech Stack

Javascript/Typescript, React, Python, PHP, PostgreSQL, Neo4j, Cypress, React Testing Library, Docker, Google Cloud Platform, Next.js

Professional Experience

Software Developer
Delving

September 2022 – Current

- Employed my mathematical expertise to improve the fuzzy matching algorithm to detect changes between Excel spreadsheets using local sensitive hashing, patience sort, and various distance metrics in Python.
- Researched alternative techniques in version control to be able to provide a more collaborative experience for our Excel users, where teams can work together more closely and catch mistakes sooner.
- Exemplified customer-obsessed innovation by addressing a real life customer problem and taking the lead on the Change Report project using OpenPyXL.
- Contributed to all of the parts of the app, from the backend task queues and database queries, to custom styling the frontend React MUI components.
- A member of a fast paced team focused on rapid experimentation, learning and data driven decision using pair programming, test driven development and Extreme Programming methodologies.

Software Developer
Checkfront

January 2020 – July 2022

- Received a hackathon award for a Recommendation Algorithm using *PostgreSQL* and *Hasura* with *GraphQL* that was deployed to our production environment.
- Researched, analyzed, documented the Availability algorithm with a small team to understand how it can be rebuilt to be more performant, less buggy and contain the features our stakeholders want.
- Addressed customer feature requests by refactoring several legacy pages using *Javascript/Typescript* and the React framework for a more modern user experience.
- Collaborated with designers, promoting our design system and helping market our brand through Storybook.
- Increasing team productivity by taking the role of Agile scrum master in a rotating role leading standups, grooming and retro meetings.

Researcher
University of Victoria

September 2015 – December 2021

- Shared my research through talks given at conferences, workshops, and seminars around the world.
- Received excellent feedback as a marker, tutorial instructor and tutor for Real Analysis, Abstract Algebra, Euclidean Geometry and the Calculus sequence.

Mathematics Instructor
Western Washington University

September 2010 – June 2015

- Co-created and instructed the course Math and Art developing a hands on classroom for improving student learning through art and technology projects.
- Presented at conferences and workshops on the benefits of illustrating mathematics in the classroom.
- Instructed: Math and Society, Algebra, Precalculus I and II, Accelerated Pre-Calculus, Calculus I and II, Business Calculus.

Education

Doctor of Philosophy in Mathematics
University of Victoria

December 2021

- Splitting factor maps into s - and u -bijective maps
- <https://dspace.library.uvic.ca/handle/1828/13661>

Research Thesis: Models Hyperbolic Toral Automorphisms using two dynamical systems, Shifts of Finite Type where codings of orbits are found using Markov partitions, and Tiling spaces consisting of aperiodic tilings that can be seen on the stable and unstable sets.

Projects

PreText developer

- Worked closely with professors to develop and deployed to production an open source linear algebra textbook at the University of Victoria. <https://github.com/eaglecj/MATH1100ER>
- PreText is an open source XML vocabulary for authors of textbooks in the sciences.
- Designed the exercise sections and created clickable drop down hints, answers, and full solutions to problems.

Rauzy Fractals with Python

- Drove the research discovery process by creating fractal-like sets using finite directed graphs.
- The main libraries used included NumPy, Matplotlib, and itertools.
- A Twitter bot deployed daily, showed the vast number of possibilities for my research using the Tweepy library, that outputs one fractal image everyday. <https://twitter.com/GraphTrib>.
- This work is also featured in the interactive Rauzy page <https://polygonart6777.github.io/RauzyPage/> using Javascript and the Plotly library.

3d printed Solenoid

- Designed and 3d printed a metal sculpture of a 2-adic solenoid, using code my own mathematical models in Mathematica and the tools from Shapeways.
- The piece was accepted to the Illustrating Mathematics Art Exhibition at ICERM and was featured in the award winning book, Illustrating Mathematics, <https://bookstore.ams.org/mbk-135>.

Wordpress developer for YYJ Tech ladies website

- Created our own theme using styling, layout and color schemes defined by our designer with Javascript and SCSS.
- Gutenberg blocks implemented in PHP improved the customization of the site.
- Advanced custom fields allowed us to create events and blog pages more intuitively.
- Maintained a kanban board to track progress and keep stakeholders informed.