James Thompson

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Technical Experience

10/2023 – 12/2023	**Creator, Software Engineer**

Laridae (https://laridae-migrations.github.io/) ⚯

Laridae is an open-source tool offering reversible, zero-downtime schema migrations for PostgreSQL

- Utilized PostgreSQL views, triggers, and connection control functions to allow multiple application versions expecting different schemas to simultaneously use the same database
- Worked strategically with PostgreSQL's concurrency control to limit application downtime to at most 2 seconds during migrations (a typical industry standard for zero-downtime)
- Provided integration of migrations into CI/CD pipelines on GitHub Actions to synchronize migrations with deployments for AWS Fargate apps
- Load-tested application by performing migrations on databases of up to 10 million rows with simulated traffic
- Collaborated with a remote team of 3 engineers across the US
- Authored comprehensive technical case study, available at https://laridae-migrations.github.io/#case-study ⚯

12/2022 – 10/2023	**Software Engineer**

Open-source projects

Developed open-source software with technologies such as React, Express, Node.js, Ruby, PostgreSQL, Docker, HTML, CSS, and more, e.g.

- Packet Pond: a real-time webhook debugging tool with custom endpoints **(DO Droplet, Nginx, MongoDB, Node.js, Express, React)**
- Chatterbox: a web forum **(Ruby, Sinatra, ERB, SQL, PostgreSQL)**

Research

Ramanujan's Theorem, CA numbers, and the Riemann Hypothesis

- Wrote C++ and Python code for a computational number theory research project with a professional mathematician.
- Performed computations on colossally abundant numbers of size up to $10^{(10^8)}$
- Modified an existing algorithm for computing colossally abundant numbers to improve its efficiency.
- Learned and utilized a C++ library for arbitrary precision interval arithmetic
- Co-authored a forthcoming paper describing our code and results

Skills

Back-end
Node.js, Express, Ruby, Go, Python, C++, PostgreSQL, MongoDB, REST APIs

Front-end
JavaScript, TypeScript, HTML, CSS, React/Redux, jQuery

Other
Git/GitHub, Docker, Nginx, Amazon Web Services, Terraform, Object Oriented Programming, Linux, Bash

Education

12/2022 – 01/2024	**Launch School**

Mastery-based software engineering curriculum. Read more at launchschool.com/employers ⚯

08/2019 – 05/2023	**Bachelor of Science, Mathematics and Bachelor of Arts, Linguistics**

University of North Carolina at Chapel Hill

- Graduated *summa cum laude* with a 3.978 GPA
- Completed multiple graduate level courses in mathematics