



RYAN B. HARVEY

Coder, Datahead, Educator, Wonk, Dad
Open source & civic tech contributor

Résumé

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<https://CodeAndData.codes>

Online Profiles

[Github Profile](#)

<https://github.com/nihonjinrxs>

[Loyola University Faculty Profile](#)

<https://www.loyno.edu/academics/faculty-and-staff-directory/mr-ryan-harvey>

[LinkedIn Profile](#)

<https://linkedin.com/in/ryanbharvey>

References?

Of course, just ask!

Who is Ryan?

I'm a fun-loving geek who is driven to create useful things (mostly with code) almost as much as I am called to teach others how to do it themselves. I work hard to improve the lives of others in my free time and want to do so at work too. I enjoy diving into data and optimizing engineering processes. I'm driven to solve tough problems, from distributed systems to machine learning to video engineering. In my spare time, I read lots of books, listen to lots of music, and build robots. I'm a happy husband and father of two.

Education and Training

Johns Hopkins University on Coursera, coursera.org

Specialization (non-credit): Executive Data Science - data science management (Mar 2016)

University of Maryland, College Park, MD

Ph.D. work (unfinished): Applied Maths, Applied Stats & Scientific Computing (candidacy Jun 2010)

Certificate (non-credit): Innovation Management (May 2010)

Master of Science: Applied Mathematics & Scientific Computing (Dec 2007)

Graduate Certificate: Scientific Computing (Aug 2007)

Graduate Certificate: Computational Harmonic Analysis (Aug 2007)

Loyola University, New Orleans, LA

Bachelor of Science: Mathematics & Computer Science (May 2001)

Certifications & Honors:

IEEE Senior Member: #80494527, New Orleans Section (Sr Member elevation Feb 2025)

IEEE Certified Software Development Professional: #005342 (Dec 2009 - present)

Certified ScrumMaster: ScrumAlliance #67206 (Sep 2009 - present)

FCC Amateur Radio Operator Technician Class License: Call Sign KC5PZE (1995 - present)

Online Courses: Various on software development, data science, machine learning, and other topics

Professional Experience

IT Specialist (Application Software), FEMA

Remote / Washington, DC

Aug 2024-present (6 months, full-time)

I'm a Staff-level Software Engineer with FEMA's Digital Customer Experience team, where I've been focused on improving FEMA's ability to deliver software in modern human-centered ways while working to modernize the systems that drive Individual Assistance programs for survivors.

- Led efforts to improve software delivery processes and tooling across the agency, including developing process documentation and cataloging policy impacting software delivery
- Developed services (Java/Spring Boot/AWS) and associated CI tooling (Gitlab/Podman/Terraform/Helm) to enable consent-based sharing of disaster assistance application data with SBA's Disaster Loan program
- Led the engineering side of a large, mission-critical systems modernization effort for the FEMA disaster Individual Assistance programs, documenting and building consensus with stakeholders along the way

Adjunct Instructor, Loyola University New Orleans

Remote / New Orleans, LA

Dec 2016-present (8 years, part-time)

As an Adjunct Instructor, I develop and teach upper level undergraduate computer science courses. In a volunteer capacity, I assist the Department of Mathematics & Computer Sciences with computer science curriculum development, project ideas, community partnerships, and research.

- Developed and taught [COSC A451 Software Engineering program capstone course](#) in a service learning mode, engaging students with real-world projects for government and non-profit partners
- Developed and taught [COSC A319 Internet Technologies elective course](#) covering Internet fundamentals, network protocols and Internet-based software development
- Developed and taught [COSC A499 Open Source Software guided study course](#) covering open source project structures, contribution approaches, roles and team structures, licenses, and communities

Mentor, FIRST Robotics FRC Team 2992 & FTC Team 25619 (Java/WPILib/NI RoboRIO)

Onsite & Remote / Mandeville, LA

Aug 2022-present (2 years, volunteer)

Brigade Captain, Code for New Orleans (Ruby on Rails/Node.js/Go/PHP/TypeScript/HTML)

Onsite & Remote / New Orleans, LA

Oct 2016-June 2023 (6 years, volunteer)

Skills

Human Languages:

English (native), Japanese (working conversation, limited reading/writing)

Academic Fields:

Computational Harmonic Analysis, Software Engineering, Distributed Computing, Machine Learning, Video & Image Processing, Digital Signal Processing

Management & Leadership:

Visioning, Strategic Planning, Public Speaking, Agile Project Management, System Architecture

Computer Languages:

Elixir, JavaScript/Node.js, TypeScript, Java, Ruby, R, Go, SQL, Python, HTML, CSS, Rust, C++, C, MATLAB, SAS

Databases:

PostgreSQL, MySQL, SQLite, IBM DB2, MongoDB, Amazon RedShift, Neo4j

Operating Systems:

Apple macOS, Linux (various; Ubuntu/Mint preferred), Microsoft Windows

Tools, Packages & Frameworks:

Git, Github, Gitlab, Phoenix, Express, React, Rails, Spring Boot, Shiny, Flask, dbt, NumPy, SQLAlchemy, and others

Design & Media Creation Software:

Google G Suite, MS Office, DaVinci Resolve, Adobe Creative Suite, Apple iWork, Mural, Inkscape, The GIMP, OnShape

Further details and prior work experience can be found at <https://CodeAndData.codes>, and pages linked from there.

Sr. Software Engineer (contract), MBTA

Remote / Boston, MA

June 2023-Aug 2024 (1 year, full-time)

At the MBTA's Technology Innovation Department, a group working to ensure that riders of MBTA's transit services have the best possible experience getting where they need to go, I worked in the Fares Technology team on Elixir/Phoenix-based apps and services enabling easier customer-side management and back-office distribution of fare products: CharlieCards, passes, and reduced fares programs.

- Worked with our team to bring a new rider-focused re-imagining of the MyCharlie CharlieCard management website to MVP launch on time
- Designed, specified, and implemented features in Elixir and Phoenix LiveView to integrate with various backend services, including workflow, payment, SSO and other platforms, including a role-based authorization framework and features for a backend administrative side of the MyCharlie application
- Built infrastructure, data migration, asynchronous task support and more using Terraform, AWS, and Github Actions to enable systems to support rider use and back-office processes effectively

Staff Software Engineer, Screencastify

Remote / Chicago, IL

January 2022-June 2023 (1.5 years, full-time)

At Screencastify, a video-focused ed tech startup, I helped the team operate effectively and the company be successful, including de-risking and prototyping new ideas and approaches, breaking down and planning engineering work, architecting large-scale changes to the code bases, identifying patterns and technologies that we could build on, coaching and mentoring colleagues, building software and supporting systems, and pairing and mobbing with fellow engineers to solve problems.

- Identified and de-risked opportunities to maintain current revenue streams while building a new browser-based video capture and editing app with just-in-time video processing, manifest generation and async out-of-band video processing (React/TS/Node)
- Led and implemented large portions of a project to migrate critical legacy data to new systems
- Optimized CI pipelines for efficiency and visibility (Docker/Github Actions/Google Cloud/Terraform)

Senior Software Engineer, Healthify (now WellSky)

Remote / New York, NY

March 2021- January 2022 (9 months, full-time)

I was a senior member of the Engineering team at this mission-driven social determinants of health startup, where I helped build our Rails app, AWS/Aptible infrastructure, and dbt/Looker data services.

- Prototyped and built in-app self-serve reporting feature long requested by customers, integrating Looker dashboards and reports into our Ruby on Rails-based application, as well as enabling the team by improving DevOps pipelines, tooling, and observability of ELT processes, and by mentoring earlier-career engineers along the way

Senior Backend & Data Engineer, TED Conferences

Remote / New York, NY

Aug 2016-March 2021 (4 years, full-time)

In this position on TED's Technology Team, I built processing pipelines and products for TED's web presences and internal tools. I spent two years on the Analytics Squad, then moved to the Video Squad.

- Built a user recommendations API that serves recommendations for over 10 million subscribed users using R, Node.js, and Go.
- Built an automated, containerized video encoding system in Node.js with FFmpeg and integrated it with our Ruby on Rails-based asset management app, including creating an open source [Fessionia Node.js library](#) for integrating FFmpeg

IT Project Manager, Executive Office of the President

Onsite / Washington, DC

Apr 2012-Aug 2016 (4 years, full-time)

In the Budget Systems Branch at the White House Office of Management and Budget, I was responsible for the development of our government-wide data collection platforms (Ruby on Rails, Java) enabling the development and publication of the President's Budget Proposal each year. I also managed our UX design team and improved our development and project management tools and processes.

- Developed, de-risked, and began implementation of a multi-year architecture shift to cloud-ready services, including hardware and networking transition, software architecture and interface specification, service transition and launch planning, CI/CD automation, and security, monitoring and maintenance planning
- Managed development and improvement of a suite of collaboration applications, leading several cross-functional teams of contractors and in-house technical staff in work on over 50 applications
- [Built and delivered a map-based display of community programs information](#) on the [White House website front page](#) which was covered by Wired magazine