RYAN B. HARVEY

Coder, Datahead, Educator, Wonk, Dad
Open source contributor and maintainer

Résumé

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https://CodeAndData.codes

Online Profiles

https://people.loyno.edu/~rharvey

https://github.com/nihonjinrxs

https://linkedin.com/in/ryanbharvey

https://twitter.com/CodeAndData

References

Professional

Collin Miller
Former Sr. Staff Engineer @ Screencastify
641-455-6516 • collintmiller@gmail.com

Gavin Hall
Former Chief Technology Officer @ TED
561-601-4295 • gavin.hall@gmail.com

Michael Twentyman
Former Director of Engineering @ TED
518-423-8832 • mike@thirdfloorstudios.com

Personal

Rev. Elizabeth Lott
Sr Pastor @ St Charles Ave Baptist Church
504-376-3429 • Elizabeth.Lott@scabc.org

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 enjoy diving into data and have been known to get lost in SQL at times. I'm driven to solve tough problems, from distributed systems to machine learning to video engineering. I work hard to improve the lives of others in my free time and want to do so at work too. I read lots of books, but never seem to get through my reading list. 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.: Applied Maths, Applied Stats & Scientific Computing (candidacy Jun 2010; not completed)
Certificate (non-credit): Innovation Management (May 2010)
M.S.: Applied Mathematics & Scientific Computing (Dec 2007)
Graduate Certificate: Scientific Computing (Aug 2007)
Graduate Certificate: Computational Harmonic Analysis (Aug 2007)

Loyola University, New Orleans, LA

B.S.: Mathematics & Computer Science (May 2001)

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

Professional Experience

Staff Software Engineer, Screencastify

Remote / Chicago, IL *January 2022-present (1 year, full-time)*

I'm a Staff Software Engineer with the amazing team at Screencastify, a startup helping to make video-based instruction easy for teachers and school districts by providing a suite of tools for creation and editing of videos and assignment creation and tracking based on those videos. In that role, I do a variety of work to help 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 can build on, coaching and mentoring colleagues, building software and supporting systems, and pairing and mobbing with fellow engineers to solve problems.

- De-risked, identified, and scoped work for opportunities to maintain current revenue streams while building new products
- Built features in our React/TypeScript browser-based video capture and editing application to support just-in-time video processing and manifest generation and async out-of-band video processing
- Led and implemented large portions of a project to migrate critical legacy data to new systems
- Optimized CI pipeline for better visibility of individual steps and refactored containerization to move common dependencies to base image

Adjunct Instructor, Loyola University New Orleans

Onsite & Remote / New Orleans, LA *Dec 2016-present (6 years, part-time)*

As an Adjunct Instructor, I 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

Skills

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

Academic Fields:
Computational Harmonic Analysis, Software Engineering, Distributed Computing, Machine Learning

Management & Leadership:
Visioning, Strategic Planning, Public Speaking, Agile Project Management

Computer Languages:
JavaScript/Node.js, Ruby, R, Go, SQL, Python, HTML, CSS, Elixir, Rust, Java, C, MATLAB, SAS

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

Operating Systems:
Apple macOS, Linux (various; Ubuntu preferred), Microsoft Windows

Packages & Frameworks:
Express, React, Rails, Sinatra, Shiny, Plumbr, Flask, Phoenix, NumPy, SQLAlchemy, and others

Media Creation Software:
Google G Suite, DaVinci Resolve 16, Adobe Creative Suite, Apple Keynote, Prezi, Inkscape, The GIMP

Further details can be found on my website: https://CodeAndData.codes, and pages linked from there.

Professional Experience (continued)

Mentor, Mandeville High School Robotics Team (FRC Team 2992)

Onsite & Remote / Mandeville, LA *Aug 2022-present (5 months, volunteer)*

Brigade Captain, Code for New Orleans

Onsite & Remote / New Orleans, LA *Oct 2016-present (6 years, volunteer)*

Data Scientist & Software Architect, Kitchology Inc.

Remote / Germantown, MD *Jun 2013-present (9 years, part-time)*

As part of a small tech team at this startup, I develop machine learning and data analysis algorithms for food and recipe science, as well as do whatever else is needed, from server and database management to launch planning to business process and software architecture.

- Developed and proved database schema supporting multiple applications and data analysis services
- Architected, implemented and deployed data services and web API from endpoints to infra and CI/CD

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
- Enabled the team by improving DevOps pipelines, tooling, and observability of ELT processes, and by mentoring earlier-career engineers

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
- Built an automated, containerized video encoding system integrated with our asset management app, including an open source Fessonia Node.js library for integrating FFmpeg (which I still maintain)

Research Affiliate, University of Maryland

Remote / College Park, MD *Jun 2014-Jun 2019 (5 years, part-time)*

I was a research affiliate in the Norbert Wiener Center for Harmonic Analysis and Applications, housed in the Department of Mathematics. I occasionally collaborated with NWC staff on research in applications of harmonic analysis, machine learning, signal processing, and dimensionality reduction of large data sets.

- Researched and created MATLAB- and C-based software for blind sound source separation using Kalman-based modulation filter banks modeling how the brain's auditory cortex processes sound cues

IT Project Manager, Executive Office of the President

Onsite / Washington, DC *Apr 2012-Aug 2016 (4 years, full-time)*

In the Budget Systems Branch of the Office of Management and Budget, I was responsible for the development of our government-wide data collection platforms (Ruby, Java EE) enabling the development and publication of the President's Budget. I made sure our 180,000+ users were happy and ensured that all the must-have features were complete within the slim timelines allocated. I also managed our UX design team and improved our development and project management tools and processes.

- Built and delivered a map-based display of community programs information on the White House website front page which was covered by Wired magazine
- 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
- Developed, delivered 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