PATRICK CASON

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Lead Front End Engineer, Team Lead

Front End Engineer with 15 years of professional experience and over 5 years leading teams up to 80 people. Likes building UI component systems, open-source libraries, and scalable web applications.

PROFESSIONAL EXPERIENCE

Raise Financial, Nashville, TN   Sep 2017 – Present
Chief Technology Officer
- Managed a 5 person engineering team to implement iterations of web application and API development written 100% in Next.js and Typescript, using the Stripe, Plaid, Mailchimp, Alpaca, and Twilio APIs.
- Built, deployed, and maintained a growing web application with hundreds of users, helping families save over $2 million towards their children's future education.

OpenMined, Lisbon, Portugal / Rio de Janeiro, Brazil   Jul 2017 – Jul 2021
Engineering Team Lead (Oct 2020 – Jul 2021)
- Led over 80 remote software engineers, cryptographers, and data scientists divided into 30 sub-teams.
- Drafted technical briefs and reports for privacy-enhancing technologies such as: Secure Multi-Party Computation, Homomorphic Encryption, Differential Privacy, Federated Learning, Self-Sovereign Identity, Distributed Computing, and Remote Computation.
- Liaised with external partners (Google, Microsoft, Twitter, and the University of California) to write grants totaling over $2 million for the purposes of funding engineering efforts across the organization.

Federated Learning Team Lead (Aug 2019 – Oct 2020)
- Architected the world's first open-source libraries for distributed federated learning on web (Javascript), Android (Kotlin), iOS (Swift), and server/internet of things (Python).
- Coded a bridge library to convert PyTorch and TensorFlow plans into TensorFlow.js operations for trusted execution in remote environments, such as a web browser.
- Authored the entire technical architecture, system design, project roadmap, and grant proposal (totaling $500,000), while managing a team of over 20 data scientists and software engineers.

Web and Mobile Privacy Researcher (Jul 2017 – Aug 2019)
- Served in roles primarily related to system development, software design, and community management - ultimately helping to grow the organization to over 14,000 members from over 80 countries worldwide.
- Awarded a paid 3-month research grant by the RAAIS Foundation out of an applicant pool of over 6,000 people to develop a library for Federated Learning in the browser.

Satchel Health, Nashville, TN   May 2014 – Jan 2017
Director of Engagement (Apr 2016 – Jan 2017)
- Trained over 200 doctors and nursing staff members in over 15 of long-term health facilities across the US.
- Triaged deployment issues, established best practices, and designed the user education process to pipeline feedback gathered in the field back to the sales, marketing, design, and engineering teams.

Senior Front End Engineer and Designer (May 2014 – Apr 2016)
- Designed and developed the organization's telemedicine software for web (Javascript) and Android (Java).
- Integrated 3 different third-party hardware devices like Google Glass, Bluetooth medical devices to stream live patient vital signs to a remote clinician in a secure HIPAA-compliant environment.
- Delivered live, multi-source audio and video feeds, including patient vital signs, via a purpose-built WebRTC application, coordinating with a horizontally-scaled Redis pub/sub socket server.

Poliana, Nashville, TN   Jun 2013 – Dec 2014
Head of Product
- Engineered the entire web application using AngularJS, integrated with a Ruby on Rails API.
- Implemented D3.js and other advanced data visualization tools to create interactive data visualizations describing the American political system.
- Aggregated 5 public datasets on the American political system amassing over 110 million rows of unstructured data on lobbying and campaign finance.

Golden Spiral, Nashville, TN   Jul 2011 – Aug 2012
Senior Web Developer
- Developed over 40 WordPress websites for clients in the music and entertainment industries.
- Collaborated with a designer using the Adobe Creative Suite to translate designs into mobile-first websites.
- Coded 10+ custom PHP WordPress plugins to augment functionality on client websites.

Freelance, Nashville, TN   May 2007– Present
Full-stack Javascript Developer and Designer
- Delivered over 30 fully-responsive websites, web and mobile applications, and UI component libraries to dozens of clients since high school.
- Collaborated with teams ranging from 2 to 100 people on projects related to finance, healthcare, government, human intelligence, entertainment, and data science.

EDUCATION

Belmont University, Nashville, TN   May 2014
Bachelor's of Web Programming and Design (with a Minor in Entrepreneurship)
Honor Roll, Dean's List

SKILLS

- HTML/CSS – 20 years
- Javascript – 17 years
- Adobe Suite – 16 years
- Wordpress – 12 years
- Node.js – 11 years
- Github – 11 years
- AWS – 9 years
- Firebase – 8 years
- SQL – 8 years

- React – 7 years
- Stripe – 7 years
- WebRTC – 7 years
- Typescript – 6 years
- D3.js – 6 years
- Google Cloud – 6 years
- Sketch – 6 years
- Webpack – 5 years
- Docker – 5 years

- Jest – 5 years
- Figma – 4 years
- Next.js – 4 years
- Cypress – 4 years
- Plaid – 4 years
- Twilio – 4 years
- Azure – 2 years
- Angular – 2 years

Familiar
Python, Ruby on Rails, PHP, and Java