

# Ambareesh (Amby) Balaji

University of Waterloo • 2A Software Engineering

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## Technical Skills

**Languages:** JavaScript (ES2015+), CSS3, SCSS, HTML5, C++, C, Rust, Python, Scala, OCaml, Haskell

**Tools and Frameworks:** React, Redux, Vue, Webpack, Node.js, Mocha, GraphQL, Unix, MongoDB, Docker

## Work Experience

**Freelance Web Developer** | CIGI - City of Waterloo, Waterloo, ON 🌐 *Sep 2017—present*

- Developed a **Vanilla JavaScript** and **SVG** based Annual Report web app built using **Jekyll** and **Webpack**
- Built a **2.5D interactive** timeline visualizer from the ground up, without using any external libraries
- Implemented **mouse** and **touch** gestures, and device-specific **workarounds** like momentum scrolling
- Worked on **progressively loading** high-res images, and **efficient** switching from desktop to mobile mode

**Software Developer** | Rangle.io, Toronto, ON 🌐 *May—Aug 2017*

- Worked in a **Scrum** team, practicing modern **functional** JavaScript using **Ramda** and **Immutable.js**
- Built **React components** and corresponding **backend APIs** to help quickly identify excesses and deficits in staffing, saving the management and talent teams significant amount of **time** and **money** long-term
- Wrote **Mocha/Chai** unit tests using **Enzyme** and **Sinon**, improving code coverage from 70% to **85%**
- Revamped **Redux** reducers and moved **computation-intense** logic to the backend, improving performance
- Implemented **testing branch builds**, deployed them on **AWS EC2** in **Docker** containers with **CircleCI** integration, and worked on **OAuth2** implementation on the main server for their authentication
- Improved **Webpack**, **Babel**, and **Docker** configs for **more efficient** development, testing, and deployment

## Projects

**Jam Buddy** | React, Redux, WebAudio API, Synaptive.js *Oct 2017—present*

- Working on an **automatic karaoke** web-app that auto-generates a background track for the user's voice
- Using **deep learning** to determine the **musical scale** using the dominant frequency in the user's voice

**Sign Language Translator** 🌐 | Python2.7, Leap Motion Orion SDK *Nov 2016*

- Worked on an **American Sign Language** to speech translator using a **Leap Motion** sensor
- Implemented algorithms that interpreted **hand gestures** using **linear algebra** to generate English words
- Helps the hearing and speech impaired **better communicate** with people not aware of ASL
- Won **First Place** and "**Most Innovative Hack**" awards at EC Hacks 2016, Trent University, Peterborough

## Activities

- Embedded Team C++/Arduino developer, **Waterloop** 🌐 - University of Waterloo's Hyperloop initiative
- Marking Teaching Assistant for **MATH 124**, University of Waterloo
- **WEEF** Committee Member, University of Waterloo

## Education

**University of Waterloo** 🌐 | Bachelor of Software Engineering (BSE) *Sep 2016—Apr 2021*

Cumulative GPA: 3.95/4.0 *(expected)*

- Dean's Honours List: Fall 2016, Winter 2017
- Faculty of Mathematics National Scholarship (\$12000) awardee, one of 12 Canada-wide