

# Zachary Macke

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## Education

**University of Iowa**, Iowa City, IA

Aug. 2016 – May 2020

Major, Minor: B.S. Computer Science, Mathematics

## Work Experience

**Charles Schwab**, Software Engineer

Jun. 2020 – Present

- Native mobile engineer working with Kotlin and Java to port existing client facing web experiences to the mobile platform, including beneficiary's functionality, debit card management, and user's My Profile.
- Compressed the Schwab Android app by 50% from over 100mb to under 50mb by migration to Android App bundles, image compression, and use of a personally developed internal Python library to analyze Android apk dependencies.
- Created and deployed the CI/CD pipeline for the Schwab My Profile module including automated Bitrise builds, testing and deployments to App Center.
- Assisted in the creation of a two-week onboarding bootcamp for new mobile engineers and successfully onboarded 6 college graduates onto Schwab's mobile engineering team.

**University of Iowa Hydroinformatics Lab**, Software Engineer

Aug. 2019 – Apr. 2020

- Created a 3D, interactive, web visualization in JavaScript (Three.js) of the Clear Creek Watershed in Coralville, IA by converting a black / white elevation map into a 3D, interactive heightmap.
- Converted ArcGIS KML data of the watershed and corresponding river segments to latitude / longitude data and overlaid it on top of the 3D heightmap, in an interactive fashion, to observe flooding effects in different river segments.

**The Walt Disney Company / ESPN**, Software Engineering Intern

Jun. 2019 – Aug. 2019

- Implemented and developed a redesign of ESPN.com's article page which is utilized across all articles on the site. Refactored the page to React across the data flow from data parsing to content display.
- Assisted the Site Development/Consumer Products team with the development and maintenance of ESPN.com and its editions, from the ESPN.com front page to scoreboards, player cards, and more. Utilized ReactJS, Redux, HTML, Tea and CSS.

**Raytheon / Collins Aerospace**, Data Science Intern

May 2018 – May 2019

- Implemented and trained Convolutional Neural Network architectures in TensorFlow to display an emoji corresponding to the user's emotion above their head in real time for use on a Nvidia Jetson TX2.
- Developed an internal tool which utilized facial recognition in TensorFlow, Google Calendar, and Gmail APIs to scan a conference room, detect who is missing based upon the Google Calendar guest list, and email said missing attendees.

## Programming Projects

**Portfolio Website** (React)

- Fully responsive personal website (zachmacke.com) made to display work experience and prior projects, custom built from the ground up utilizing React and Sass.

**StackBot** (Python & Natural Language Processing)

- Command line chat-bot, responds with the highest rated Stack Overflow answer to a user-inputted Python related question.
- Utilized Google Big Query and a Natural Language Processing model (doc2vec) to predict the best answer.

## Skills & Involvement

**Proficient:** Python, Kotlin, JavaScript (ReactJS), Java, HTML, CSS (Sass)

**Familiar:** NodeJS (Express), SQL, C++, Haskell, Google Cloud Services / BigQuery, Tableau

**Relevant Coursework:** Data Structures, Discrete Structures, Object Oriented Development, Algorithms, Calculus I-III, Linear Algebra, Operating Systems, Theory of Computation, Parallel & High-Performance Computing, Programing Language Concepts