github.com/GalMunGral

Wenqi He

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EDUCATION

B.S. Computer Science, Georgia Institute of Technology   *Aug. 2015 - Dec. 2019*
- Concentrations: Information Internetworks, Modeling and Simulation, Minor: Physics
- Graduated with Highest Honors (cumulative GPA: 3.97/4.0, major: 4.0/4.0, minor: 3.8/4.0)

EXPERIENCE

Freelance JavaScript Engineer, Etude (`etudereader.com`), Atlanta   *Sep. 2019 - Present*
- Implemented multiple features for the **Electron**-based PDF reader, including persistent non-contiguous text highlighting and table of contents parsing, which worked for 85% of user-uploaded PDF documents without bookmarks.
- Discovered and fixed a race condition between text layer rendering and background computations in the default **PDF.js** viewer that caused disappearing highlights on large documents.

Front-end Engineer Intern, PegasusCRM, Atlanta   *Jan. - May. 2018*
- Worked on a new feature of the web application that allows merchants to organize potential customers into lists.
- Recreated core features of DataTables jQuery plugin in **Vue.js** to allow for future customizations.
- Implemented UI design using Laravel (PHP) Blade templates, **jQuery** and **SCSS/CSS**.
- Used **Jira** to manage assigned tickets and **Confluence** to manage internal documentation.

PROJECTS

Koala (Front-end Framework inspired by React, MobX and styled-components)   *Apr. - May. 2020*
- Utilized Background Tasks API and ES6 generators to batch DOM updates and enable non-blocking rendering.
- Implemented dependency tracking using ES6 proxies and simulated dynamic scoping using prototypal inheritance.
- Built a **Babel** plugin to simulate the syntax for writing components as lazily evaluated function calls.

MARTA Public Transport Management System (Web Application)   *Sep. - Nov. 2017*
- Developed a web application that allows passengers to record trips, manage card balances and view travel histories and allows administrators to manage station information and review aggregate traffic and revenue in any time period.
- Implemented the front end using **React/Redux/React Router** and **Vue/Vuex/Vue Router** (separately).
- Also used **MySQL**, Sequelize, **Express**, **JWT**, React-Bootstrap and **Bulma**.

Georgia Tech Midterm Survey System (Web Application)   *Aug. - Nov. 2019*
- Developed a web application for students to provide feedback to instructors and the Office of Academic Effectiveness.
- Used **Angular** with Salesforce Lightning Design System and D3.js to render survey forms dynamically from JSON-encoded survey templates and response data stored in a **MongoDB** database.
- Integrated Georgia Tech Login Service (CAS) and Canvas LMS REST API to determine user type and enrollment status.
- Used Angular services and Web Storage API to manage user login status, access token and data requests.
- Also used Express, **RxJS**, **Puppeteer**, Ajv, ldapjs.

Online Python Console and Chat Room (Web Application)   *May. - Aug. 2018*
- Developed a chat room application in **Node.js** based on Python REPL instances that can interact with multiple users.
- Used **Socket.IO** to broadcast messages and provide the signaling service for two-person **WebRTC** video calls.

Mini Visual Studio Code (Electron Application)   *May. 2019*
- Developed a simple desktop file explorer and text editor with **Electron**, **React** and **styled-components**.

JavaScript to WebAssembly Compiler   *Apr. 2020*
- Developed a compiler that translates a small subset of JavaScript into pretty-printed WebAssembly text format.
- Implemented a a shift-reduce parser as an alternative to Babel parser based on the ESTree spec.

Server Port Multiplexer/Demultiplexer   *Jul. 2019*
- Implemented a simple mechanism to deploy multiple applications as a single project on **Heroku** by translating between TCP port numbers and URL path prefixes using **service worker** and **Node.js** reverse proxy.

Hangman Online (Command-line Application)   *Nov. 2018*
- Implemented the word guessing game in **C**, using **sockets** and **pthreads** to support concurrent two-player games.

Sitting Time Recorder (Mobile Application, Proof of Concept)   *Jan. 2019*
- Utilized **iOS** Core Motion (Swift) and **Android** sensor framework (Kotlin) to detect standing-up/sitting-down motions.
- Utilized MySQL, Golang and **D3.js** to display daily sitting time in WebView/WKWebView as a **SVG** calendar heatmap.

Todo (Mobile Applications, Proof of Concept)   *Jul. - Aug. 2019*
- Implemented to-do list apps in iOS UIKit (Objective-C), SwiftUI, Flutter, React-Native and NativeScript.