

# Bilal Raja

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## Core Competencies

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- C++ Software Development (3 years)
- Python (2 years)
- Java (1 year)
- SQL (1 year)
- HTML/CSS/JavaScript (2 years)
- ReactJS (1 year)
- MEAN Stack (1 year)
- Angular (1 year)
- iOS Development (1 year)
- Spring Boot (1 year)

## Education and Training

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**Bachelor of Arts : Computer Science**, 2017

**University of Michigan** — Ann Arbor, MI

**CSE Courses Taken:** Web Database and Information Systems, Data Structures, Software Engineering, Introduction to Algorithms, Theory of Computation, Computer Organization, Database Management Systems, Cryptography, Essentials for Computer Scientists

## Projects

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### Wikipedia Search Engine:

- Built a full-stack Wikipedia Search Engine utilizing **Python Flask**, **AJAX**, and **HTML/CSS/ReactJS**.
- Implemented a MapReduce server running on **Hadoop's CLI** that indexes and persists a set of Wikipedia files.
- Developed an index server that handles search queries and returns the best results based on **PageRank** scoring.

### Photobook:

- Built a full-stack personalized photo viewing website using **NodeJS**, **HTML/CSS/Angular**, and **MySQL** which allows users to upload, group, and post photos.
- The frontend is implemented as **feeds** that contain photos posted by users and their friends.
- The backend is implemented as a **Cache Server** which abstracts the database and serves the purpose of reducing query latency.

### PathFinder:

- Developed a program that takes as input a dictionary of any size and start and end words and attempts to find a path from the start to end word. With no limit on dictionary size, the program ran successfully on dictionaries of size 100,000 in under a minute.

## Experience

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### Application Developer

#### UMentor

- Developed the application using an interest based matching algorithm which allows first year students to find a mentor that best suits their needs
- Identified and linked with multiple mentorship programs within the University of Michigan
- Learned Swift programming with no previous knowledge of mobile development to develop the app
- Implemented functionality to manage schedules, calendars, and events based on student interests and needs