# Kush Bhagat

Computer Science at University of Waterloo

kabhagat@uwaterloo.ca
github.com/kushbhag
kush.bhagatworld.com
linkedin.com/in/kushbhagat

## Skills

**Languages:** C++, Python, TypeScript, C#, C, SQL, Bash, MIPS, Java, JavaScript, HTML/CSS
**Technologies:** Node.js, Angular, ASP.NET Core, Azure, Django, WPF, TensorFlow, Unity, OpenCV, Git

## Work Experience

### Web Developer | Equitable Life of Canada — Sept 2020 – Dec 2020

- Reduced load to backend server by **30%** by creating a client-side caching service to intercept high-usage data
- Decreased average time spent on project deployment by **1 hour**, by developing an **ASP.NET Core** web app that automatically notifies project stakeholders of deployment approval
- Improved application and project management by developing a **RESTful API** in **ASP.NET Core** that contains endpoints for updating and maintaining project information
- Organized data for **10,000+** applications and servers by building an **Angular** app to manage their relationships

### Software Developer | Rocscience — Jan 2020 – Apr 2020

- Doubled user usage of CAD themes by creating a theme manager in **WPF .NET** that allows creation of application-wide themes that control the main interface as well as **3D** models, maps, and environments
- Improved program's maintainability by developing a system controller in **WPF** that controls all UI elements
- Created a tool in **C#** that automated retrieval of app documents, saving **2-3 minutes** every search

## Projects

### Road Mixify | Angular, Node.js, Heroku, Spotify API — /RoadMixify

- A web app allowing Spotify users to create the perfect road-trip playlists based on trip duration and user-selected artists, albums, and tracks

### Image Repository | Node.js, Angular, MongoDB, Heroku — /ImageRepository

- An image repository web application that allows users to view and upload private/public images
- Built an **API** to handle user authentication and securely upload/delete images with JSON web tokens

### Connect 4 AI | JavaScript — /Connect4Web

- Created a search tree using a depth-limited **minimax algorithm** to parse through **16,800+** moves every turn
- Optimized search by **40%** by using transposition tables and alpha-beta pruning

### WLP4 Compiler | C++, MIPS — /WLP4Compiler

- Implemented scanning, parsing, context-sensitive analysis, and code generation of WLP4 code (subset of C++)
- Ranked **3rd** amongst 300+ students in creating the most optimized code generating compiler

### Computer Vision Traffic Signs | Python, OpenCV, TensorFlow, scikit-learn — /ComputerVision

- Created a convolutional neural network to recognize and classify road traffic signs for self-driving cars

## Education

### University of Waterloo | Bachelor of Computer Science, Co-op — 2018 - 2023

- **Relevant Courses:** Data Structures and Algorithms, Object-Oriented Design, Database Management
- **Notable Achievements:** President's Gold Scholarship ($20,000), Semi-finalist in New Venture Case Competition, Semi-finalist in Starbucks Case Competition