

# Vignesh Selvaraj

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## EDUCATION

**Master of Science, Computer Science  
(Scientists and Engineers)  
University of Southern California**

**Jan 2022-Dec 2023**

**Bachelor of Science, Computer Engineering  
University of Miami  
President's Scholar, Honor roll and Dean's list recipient**

**Aug 2017-Jun 2021  
GPA: 3.922**

## SKILLS

- Python (Backend server hosting with flask and web API development, Machine-learning projects involving SVMs, Linear and Logistic Regression, Neural Networks, KNN, Decision Trees)
- Building ML models, tuning hyper-parameters, cleaning data, applying ML techniques on Jupyter Notebook using packages like NumPy, pandas, Keras, scikit learn, TensorFlow
- Dart, Flutter, SQL, Database Design, Git, Kubernetes (App development for IOS and Android)
- Java (Android Studio Environment + Android App Programming)
- C, C++ (Game development implementing AI vs Human maze runner)
- HTML, CSS, JavaScript, TypeScript (Web page design for Fake-News Detection in news article links)
- Angular Framework (Hosting single-page applications with Node.js backend)

## WORK EXPERIENCE

**Student Researcher (Quantum Natural Language Processing)  
CKIDS DataFest, University of Southern California**

**May 2022-Dec 2022**

- Performed Supervised learning using random forests and bagging utilizing USC's HPC (USC's supercomputer)
- Learnt Quantum Computing and Quantum Circuits rapidly to construct custom circuits to run on IBMQ cloud using LAMBEQ
- Researched QNLP techniques to embed meaning to words and convert sentences to Quantum Circuits
- Awarded "Best Data Science Student Developer" across 12 teams consisting of 70 members

## ACADEMIC PROJECTS

**Yelp Clone Website ( <https://yelpcloneangular.wl.r.appspot.com> )**

- Built a yelp style, single-page web application where users can search for restaurants and make reservations
- Leveraged Angular framework and bootstrap to create a responsive, fast web-app with no page-refresh
- Front-end interacts with 4 different APIs (IP info, google maps, yelp business search, yelp proximity search) to fetch results
- Node.js backend hosted on GCP that scales with frequency of incoming requests

### I-Leftover

- Project Lead with a team of 4 to develop a mobile app where users can share leftover food with other users
- Designed App workflow by incorporating Software Design Architectures like MVC and Pub-Sub model
- Leveraged firebase to devise own messaging API between users by creating unique session IDs for each conversation
- Delegated development of 5 core modules (Authentication, Messaging, Data API, Maps API, UX) between team members
- Mediated weekly Scrum meetings keep track of milestones and led a final presentation for stakeholders

## LEADERSHIP

**Associate Chief Justice, Student Government Supreme Court**

**Mar 2018-May 2021**

- Sworn in and voted as the secondary leader for judicial branch of Student Government
- Paneled multiple court hearings regarding student code/election violations to reach verdicts
- Represented and spoke on behalf of Court during senate meetings

**Transport Ops Specialist, 3<sup>rd</sup> Sergeant  
Singapore Armed Forces, Singapore**

**Feb 2016-Dec 2017**

- Performed at top 30% in Basic Military Training and graduated from command school as a 3rd sergeant
- Led and managed a platoon of 40 men in field missions and multiple training exercises
- Conducted foreign exercise as second in command for transport division spanning 3 platoons of 60 men