RITWICK **VERMA**

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**EDUCATION**

**Master of Computer Science** Irvine, California | Sep 2019 - expected Dec 2020

University of California Irvine

Courses: *Fundamentals of Algorithms, Machine Learning and Data Mining, Operating Systems, Computer Security, Parallel and Distributed Computation*

**Bachelor of Technology,** *Computer Science & Engineering* Chennai, India | July 2015 - May 2019

SRM Institute of Science and Technology

Courses: *Algorithm Design, Data structures, OOP using C++, Web programming, AI, ML, Java, Python, OS*

**TECHNICAL SKILLS**

**Languages:** *C, C++, Java, Python*

**Technologies:** *PHP, JavaScript, Android, M**ySQL**,* *Django*

**Interested domains:** *Algorithms, Data Structures*

**EXPERIENCE**

**Shoelace Wireless Inc. |** *Software Development Intern*  June 2020 - Present

* Conceptualized a tool for detailed statistical recording of different radio technology metrics like 5G and WCDMA while performing speed test analysis on them.
* Data collected is stored in Room, an abstraction of SQLite and stored on AWS servers.

**Advanced Structures India |** *Software Development Intern* June - July 2018

* Extracted clients SQL data of different Django models linked by relations from the server and cataloged in excel sheets for internal documentation.

**Bharat Heavy Electricals Limited |** *Software Development Intern* June - July 2017

* Created an advanced library management system for a model university.
* Programmed the web application using Java EE while designing the dynamic web pages using JSP, servlet, and SQL. Optimized the application for low latency operations achieving 2 milliseconds response times.

**PROJECTS**

**ShutUp |** *Android App (*[*published*](https://play.google.com/store/apps/details?id=com.laughingstock.ritwick.shutup&hl=en_US)*)* Nov 2016 - Aug 2017

* Implemented and designed an open-source gesture-based telephony control application in Java and Kotlin, published on play store licensed under GPLv3; more than 26000 downloads and 4.3 stars.
* Configured the application to enable the users to control the call state i.e. mute, end call or answer calls with a wave of a hand. It also allowed users to schedule calls for a future time.

**Game |** *SDL2, C++* May 2020 - Present

* A Role Playing Game made in C++ without using any game or physics engine. The game consists of an elaborate inventory and weapon system. Maps are loaded from XML files made in Tiled which are converted to in game components.
* Sprites are inserted in a render queue to perform Z axis compensation. Map is drawn relative to the camera coordinates which follows the player according to a function of distance. This prevents redrawing the whole map at each frame and optimizing resource usage and memory usage under 200 mb.
* The game utilizes various core Object Oriented concepts like multiple and multilevel inheritance, polymorphism using virtual functions and data abstraction to perform things like rectangle and line collisions, tile and sprite animations and physics simulation.

**Data Acquisition System for a Sensor Network |***B.Tech Project*July 2018 - May 2019

* Engineered a data acquisition system for a sensor network in a solar electric vehicle using Arduinos as slaves reading raw data and RaspberryPi as CPU displaying that information on the drivers’ screen in real-time as well as uploading on Firebase.
* Overcame delays due to overwriting of the serial buffer while maintaining various safeguards such as temperature and voltage monitoring in place to prevent any potential tragedy.

**D |***B.Tech Project*July 2018 - May 2019

Engineered a data acquisition system for a sensor network in a solar electric vehicle using Arduinos as slaves reading raw data and RaspberryPi as CPU displaying that information on the drivers’ screen in real-time as well as uploading on Firebase.

**Data Acquisition System for a Sensor Network |***B.Tech Project*July 2018 - May 2019

* Engineered a data acquisition system for a sensor network in a solar electric vehicle using Arduinos as slaves and RaspberryPi as CPU displaying that information on the drivers’ screen in real-time, asynchronously uploading to Firebase.

**FlapPYball |** *Game in Python* Dec 2018

* Designed and created a graphic based 2D soccer game made in PyGame where the players played as Flappy the bird.
* Simulated gravity, velocity, and collisions using extremely modular and organized code.

**EXTRACURRICULARS**

**Solareon** **|** *Head of Electronics* Aug 2018 - May 2019

* Conceptualized and engineered a data acquisition system for a sensor network in a team building solar electric vehicle.
* Performed at national level in solar vehicle competitions like SUVC 2018 and ESVC 2016 and won future car award, runner-up for best solar endurance and best innovation report among other recognitions.

**Prog-Red |** *Co-founder*July 2013 - May 2015

* Founded the programming club, PROG-RED (programming redefined) where we organized and presented various workshops on Arduino, Android app development, Web development and Competitive Programming for junior students.

**RECOGNITIONS AND CERTIFICATIONS**

* Selected among top two people who cleared ZCO (Zonal Computing Olympiad)
* Won best innovation award for smart canister system at hackathon conducted by college IT association.
* Applied machine learning in python Aug 2017 – present
* Introduction to computer programming July 2016 – present