

RITWICK VERMA

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EDUCATION

Master of Computer Science

University of California Irvine

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

Irvine, California | Sep 2019 - expected Dec 2020

Bachelor of Technology, Computer Science & Engineering

SRM Institute of Science and Technology

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

Chennai, India | July 2015 - May 2019

TECHNICAL SKILLS

Languages: C++, C, Java, Python, JavaScript, Kotlin

Technologies: Android, MySQL, Django

Interested domains: Algorithms, Web backend, Game Development, Android Application Development

EXPERIENCE

Shoelace Wireless Inc. | Software Development Intern

June 2020 - Present

- Conceptualized a tool for statistical recording of various radio technology metrics while performing speed test on them.
- Engineered a map based crowd density visualization app using MapBox. Used MVVM architecture where the repository makes API calls using Retrofit to receive data and populate model.

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 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*)

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.

RPG Game | SDL2, C++

May 2020 - Present

- A 2D 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.
- The game utilizes various core Object-Oriented concepts like multiple and multilevel inheritance, pointer based polymorphism using virtual functions and data abstraction to perform things like rectangle and line collisions, tile and sprite animations, dialogue trees and physics simulation.

Monster Sudoku Solver | Intro to AI, Course Project

Sept - Dec 2019

- Created a Monster Sudoku Solver as a Constraint Satisfaction Problem, implementing consistency checks, value selection heuristics, and variable selection heuristics. Random valid sudoku boards were tested against the solver for empirical analysis of the different algorithms.
- Forward Checking and Norgvig's check was used to check consistency whereas Minimum Remaining Value and Least Constraining Value were used for variable selection and value selection respectively.

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.