

# Kartikey Tewari

COMPUTER SCIENCE AND ENGINEERING STUDENT

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## Education

### National Institute of Technology

Himachal Pradesh, India

B.TECH AND M.TECH IN COMPUTER SCIENCE AND ENGINEERING (72.8%)

Aug 2017 - May 2022

- DS, Algorithms, Computer Architecture, Discrete Mathematics, Statistics, Theory of Computation, Advanced Database Management System
- Completed many courses on Udemmy including Web Development Bootcamp, Arcade Game in Javascript, Introduction to Shell Scripting

### Delhi Public School, Vidyut Nagar

Uttar Pradesh, India

INTERMEDIATE EXAMINATION (92.8%)

March 2015 - March 2017

- Received Meritorious student award for securing cent-percent marks in Mathematics All-India Examination
- Received NTSE Scholarship from Government of India, awarded to meritorious students.

## Work Experience

### NIT Hamirpur

Himachal Pradesh, India

RESEARCH INTERN

May 2020 - July 2020

- Designed a tree based data structure and the algorithms to generate and perform queries on it. The tree can handle all types of transitive function while providing scalable solutions.
- Exponentially, reduced Time complexity for query operations while reducing space complexity by 25% for storing data.
- Implemented the code for proposed data structure as well as contemporary methods, such as brute force method and segment tree approach in C++.
- Designed a test suite to benchmark proposed algorithm with contemporary methods. Then wrote scripts to automate the process.
- Plotted the data in a graph, and found reasons of anomaly between theoretically expected results and practical data.
- Wrote a paper on the tree, and deployed the code using Git.

## Personal Projects

### Parallel Wavellet Tree

Paper

C++, BASH SCRIPT, OCTAVE, LATEX

August 2020

- Designed a test suite for benchmarking parallel and series implementation of wavellet tree.
- Plotted the data points, and explained the behavior of generated graphs.

### Build LaTeX

Linux Utility

BASH SCRIPT, LATEX

July 2020

- Automated the process involved with Latex, such as building files and installing packages.
- Wrote detailed documentation about the flags used with the script.

### Color Ninja Game

UI/UX development

HTML, CSS, JAVASCRIPT, BOOTSTRAP3

June 2020

- Designed a game for selecting the resultant color by mixing given value of Red, Green and Blue.

### Arcade Game

AI-Gaming Engine

HTML, CSS, JAVASCRIPT, CANVASJS

June 2020

- Designed and implemented a unbeatable Artificial Intelligence based gaming engine in Javascript.
- Made a front-end of classic arcade game, powered by the in-house coded gaming engine.

### Yelp Clone

Web App

HTML, CSS, JAVASCRIPT, NODEJS, EXPRESSJS, EJS, MONGODB, PASSPORTJS

May 2020

- Made a clone of yelp, as a website of reviews.
- Implemented user-authorization and back-end API, having full CRUD functionality.
- Wrote a RESTful API for communication with database.
- Deployed the code on Heroku using Git, while hosting back-end on MongoDB Atlas cluster.

## Achievements

- Specialist at Codeforces with Rating of 1432.
- Four star at Codechef with Rating of 1815.
- Spotted bug in Microsoft Win10 Powertoys.
- Write a personal blog about tech and general topics with 4000 views, from 8 countries.
- Wrote a post about building latex on reddit, that trended on linux based sub-reddits.