Kartikey **Tewari**

Computer Science and Engineering Student

L-405, Amrapali Silicon City, Sector-76, NOIDA, UP, India

(+91) 9871607123 | kartikeya30@gmail.com | kartikeytewari.github.io | kartikeytewari | kartikey30 | kartikeytewari

Education

National Institute of Technology — *Himachal Pradesh, India*

B.Tech and M.Tech in Computer Science and Engineering (7.78) — *August 2017 - May 2022*

- Courses: DS, Algorithms, Computer Architecture, Discrete Mathematics, Statistics, Theory of Computation, Advanced DBMS.
- Completed many courses on Udemy including Web Development Bootcamp, Arcade Game in Javascript and Introduction to Shell Scripting.

Awards: NTSE Scholar (Government of India), Placed in top 0.1% nationally in Mathematics Intermediate Examination

Skills

- **General Languages:** C, C++, Python, Bash
- **Web Stack:** HTML, CSS, Javascript, NodsJS, ExpressJS, EJS, PassportJS, CanvasJS, Bootstrap, SemanticUI, Jekyll
- **Databases:** MongoDB, MySQL
- **Analytical Technologies:** Octave, Matlab, R
- **Other Technologies:** Swagger Notebooks, LaTeX, Docker, Git, Github, Heroku, Github Pages
- **Operating System:** Windows-10 (WSL-2), Linux Systems, MacOS

Work Experience

FAH — *Gurgaon, India*

SDE Intern — *August 2020 - September 2020*

- Developed REST APIs with focus on scalability, for user authentication and onboarding.
- Configured and deployed web services on Docker containers, using test driven development.
- Designed and documented the API on Swagger Open-API3 format.

NIT Hamirpur — *Himachal Pradesh, India*

Research Intern — *May 2020 - July 2020*

- Designed a new tree based Data Structure and the algorithms to build it and perform queries on it.
- The tree can handle all types of range-based queries for transitive functions while providing scalable solutions.
- Exponentially, reduced Time complexity for query operations while reducing space complexity by 25% for storing data.
- Implemented the code in C++ for the proposed data structure as well as contemporary methods, such as Brute Force and Segment Tree method.
- Designed a test suite to benchmark proposed algorithm with contemporary methods. Then wrote scripts to automate the process.
- Wrote a paper on the tree, and deployed the code using Git on Github.

Personal Projects

Parallel Wavelet Tree — *Parallel Computing*, *August 2020*

- Programmed serial and parallel implementation of Wavelet Tree.
- Designed a test suite for benchmarking both implementations of wavelet tree. Wrote scripts to automate the process.
- Plotted the data points and explained the behaviour of generated graphs. Wrote a paper based on the findings.

Build LaTex — *Linux Utility*, *July 2020*

- Automated many processes involved with Latex, such as building files and installing packages.
- Also provided CLI based snippets for basic structure of general LaTeX projects.
- Wrote detailed documentation about the flags used with the script.
- Open sourced the project on Github.

Color Ninja Game — *AI-Gaming Engine*, *June 2020*

- Designed an Artificial Intelligence based gaming engine in Javascript.
- Programmed a game for selecting the resultant color by mixing given value of Red, Green and Blue.
- Deployed the website on Github using continuous integration and Github pages.

Yelp Clone — *Web App*, *May 2020*

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

Achievements

- Specialist at Codeforces with highest rating of 1575.
- Four stars at Codechef with highest rating of 1864.
- Spotted bug in Microsoft Win10 Powertoys.
- Been an active member of college's GNU-Linux Users Group (GLUG).
- Write a blog about tech and general topics with over 4000 views, from 8 countries.
- Wrote a post about building latex on reddit, that trended on Linux based sub-reddits.