

Pritesh Kumar Verma

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EDUCATION

- **ITM University** Gwalior, India
Bachelor of Technology - Computer Science and Engineering; GPA: 8.04 *July 2016 - June 2020*
Courses: Operating Systems, Data Structures, Analysis Of Algorithms, Deep Learning, Linear Algebra, Networking, Databases.
- **Sri Chaitanya Jr. College** Vijayawada, India
Intermediate; Percentage: 84.7 *2013 - 2015*
Courses: Mathematics, Physics, Chemistry, English, Sanskrit.

SKILLS SUMMARY

- **Languages:** Python, C/C++, JavaScript, SQL, JAVA.
- **Frameworks and Libraries:** Scikit, Pandas, Numpy, Pytorch, OpenMP, Lapacke, HPC, Django, Flask.
- **Tools:** GIT, MySQL, SQLite.
- **Platforms:** Linux, Web, Windows, Raspberry, AWS.

EXPERIENCE

- **IIT Kharagpur** Onsite
Research Fellow (Dept. of Computer Science and Engineering) *May 2022 - Present*
 - **Project:** Advanced 3D computer vision techniques enable precise point cloud registration for temporally separated point cloud data of agricultural plants, revolutionizing plant phenotyping.
- **Robert Bosch Centre for Data Science and AI, IIT Madras** Onsite
Post Baccalaureate Fellow (Dept. of Computer Science and Engineering) *Aug 2022 - Feb 2023*
 - **Project:** Independent research on interdisciplinary topics: Physics informed deep learning. Conducted in-depth research on the applications of physics informed deep learning in various domains, including fluid dynamics and traffic. Developed and implemented models using Python and Pytorch.
- **IIT Dharwad** Onsite
Research Fellow (Dept. of Computer Science and Engineering) *Jun 2021 - Aug 2022*
 - **Project:** Designed and executed a hierarchical matrix-based algorithm and implemented it in C++ using MPI and OpenMP; achieved a 60% speedup and 35% reduction in memory usage compared to the baseline algorithm.
- **Raintree system inc** Remote
Software Engineer (Full-time) *Mar 2021 - May 2021*
 - **Worked on:** Created and designed interactive forms for various categories such as hospitals and insurance agencies. These forms were developed for both Raintree's web-client and software. Additionally, I was responsible for debugging and fixing issues for different clients using RSL (Raintree Scripting) and MySQL.
- **CSIR - Central Drug Research Institute** Remote
Intern *May 2019 - June 2019*
 - **Work:** Performed Exploratory Data Analysis using Python's libraries and created a database to query data efficiently in SQL.

PROJECTS

- **Is L2 Physics-Informed Loss Always Suitable for Training PINNs?:** L2 Loss is defacto for training PINNs, In this project we're trying to investigate if this is always the case for every mechanistic model.
- **Eiger:** Designed and Implemented parallel algorithms for computing eigenvalues and eigenvectors for large hss matrices. Computation of eigenvalues and vectors of large matrices could take large computation time in $O(n^3)$. Whereas SuperDC takes only $O(r^2n(\log^2n))$.
- **Fast algorithms for hierarchically semiseparable matrices:** Designed and Implemented a Parallel algorithm for storing some rank structured matrices to reduce its size by storing the matrix along a full binary tree. For an $O(n^2)$ size matrix this algorithm only takes $O(n \log n)$ storage which is a huge improvement in terms of storage.
- **Bus travel time estimation using physics informed deep learning:** Developed a physics-informed deep learning model to estimate bus travel time for specific routes by integrating mechanistic models and advanced deep learning techniques.

HONORS AND AWARDS

- Hack for Sport (Hackerearth)(Finalists) Top 13 among 4000 teams - June 2022.
- Qualified GATE examination twice with more the 90 percentile - 2020 and 2021.
- NCC (National cadet corps), NCC aims at developing character, comradeship, discipline, a secular outlook, and spirit. I have organised and been part of numerous social drives for the betterment of society.
- Best captain for team management in group project.
- Silver medal in 800 m (Annual Sports meet).
- Silver medal in Photography (Annual Day).