# KUMAR PRASUN

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• https://github.com/TestSubjector

## EDUCATION

- **New York University - Courant**, New York City, USA — Sept 2021-May 2023 (ongoing)
  Master of Science, Computer Science
  Relevant Coursework: GPU Programming, Computer Vision, Artificial Intelligence
- **Birla Institute of Technology and Science - Pilani**, Hyderabad, India — Aug 2015-May 2020
  Master of Science, Mathematics
- **Birla Institute of Technology and Science - Pilani**, Hyderabad, India — Aug 2016-May 2020
  Bachelor of Engineering in Computer Science

## EXPERIENCE

**Graduate Research Assistant, New York University** — May 2022-Aug 2022

- Study communication and memory overhead of different application types running on GPUs
- Propose and develop GPU simulator models to allow for AI assisted performance optimisation of these overheads

**Junior Research Fellow, BITS Pilani Hyderabad** — December 2020-June 2021

- Developed high-performance CUDA and MPI enabled accelerated meshfree solvers for computational aerodynamic simulations.
- The solvers were successfully able to process massive grids in the order of millions of points spread over multiple distributed systems, in multiple languages including C, Julia, Python & Fortran.
- The computational efficiency and relative performance of the different languages was benchmarked and the results presented in NVIDIA's 2021 GTC Conference.

**Google Summer of Code, OpenAstronomy** — May 2017-August 2017

- Ported several astronomical routines from NASA's IDL Astronomy User's Library to that of AstroLib.jl, an open-source library for the Julia programming language.
- Wrote several unit tests and worked on increasing the type stability & performance of the AstroLib.jl library.

## PUBLICATIONS

- Nischay Ram Mamidi, **Kumar Prasun**, Dhruv Saxena, Anil Nemili, Bharatkumar Sharma, S.M. Deshpande *On the performance of GPU accelerated q-LSKUM based meshfree solvers in Fortran, C++, Python, and Julia.* Under review, preprint at arXiv:2108.07031

- Rupanshu Soi, Nischay Ram Mamidi, Elliott Slaughter, **Kumar Prasun**, Anil Nemili, and S.M. Deshpande, *An Implicitly Parallel Meshfree Solver in Regent.* 2020 IEEE/ACM 3rd Annual Parallel Applications Workshop: Alternatives To MPI+X (PAW-ATM), Virtual Event, November 9 - 19, 2020

## SKILLS

- **Programming:** CUDA, Python, C++, Julia
- **Experience with:** DevOps and Agile, Parallel Programming (CUDA/MPI), Artificial Intelligence, Open-Source Development, Operating Systems

## ACHIEVEMENTS

- 2022 Finalist for MIT's BattleCode AI competition.
- Awarded Junior Research Fellowship by the Govt. of India
- Selected as a student intern for Google Summer of Code 2017, with the Open Astronomy organisation.