Naman Jain

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GitHub: github.com/astronamanj

Skills

- **Programming Languages:** Python, C++, MATLAB, LaTeX, SQL, ADQL
- **Scientific Libraries:** NumPy, Pandas, Astropy, Matplotlib, Jupyter, SciPy
- **Astronomy Software:** HEASoft (Xspec, xselect), CASA, CARTA, TopCat
- **Workflow and Infrastructure:** Git, Docker, Bash, SLURM, SQLite, Sequel Ace, CANFAR
- **Spoken Languages:** Hindi, English, French, German
- **Productivity Tools:** Zoom, Excel, Slack, Microsoft Office Suite, Notion

Work and Research Experience

- **Graduate Researcher**, Trottier Space Institute, McGill University *Sept 2023 – Present*
  - Developed and maintained pipelines for CHIME/FRB to process 4500+ events with reproducible fluence and sensitivity calculations.
  - Refactored legacy code for GitHub Actions and Docker deployment; integrated into the collaboration's workflow system.
  - Added support for baseband and VLBI data; pipeline now underpins multiple CHIME/FRB analyses.

- **Machine Learning Intern**, Trottier Institute for Research on Exoplanets (iREx) *May – Aug 2023*
  - Modeled exoplanet populations using KDE and Normalizing Flows; merged NASA and MOCA datasets to estimate system ages.
  - Built an MCMC pipeline to compute stellar proper motions from WISE and Pan-STARRS data.

- **Undergraduate Researcher**, McMaster University *Sept 2021 – Apr 2023*
  - Analyzed CO isotopologues in galaxy mergers using 3-D ALMA data cubes to study gas properties.
  - Built C++ solvers for fast oscillating integrals using Picard-Lefschetz theory for application in physics.
  - Cross-matched SDSS, GALEX, and MPA-JHU catalogs and ran phase-space analysis on 100,000 galaxies to study star formation and quenching processes.

Leadership & Engagement

- **Community Advisor**, McMaster University *2021 – 2023*
  Supported 100+ students in residence through conflict resolution, emergency response, and event programming.

- **VP, Professional Development**, McGill Physics Grad Association *2023 – 2024*
  Organized career panels, workshops, and alumni networking to support graduate student development.

- **Peer Leader**, Student Success Centre, McMaster University *2021 – 2022*
  Led outreach and professional development events for international students, including webinars and resource creation.

Education

- **PhD in Physics**, McGill University, Montreal, QC *Expected 2029*
- **MSc in Physics**, McGill University, Montreal, QC *July 2025*
- **BSc (Honours) in Astrophysics**, McMaster University, Hamilton, ON *July 2023*