David Nuccioni

Perugia, Italy

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Summary

Astrophysics student with problem-solving skills and a solid foundation in data analysis and computational methods. Experienced in approaching complex problems with analytical thinking and motivated to apply scientific and technical skills in practical and research-driven environments.

Education

B.Sc. in Physics sep 2018 - feb 2025
Università degli Studi di Perugia Perugia, Italy

- Relevant coursework: Physics, Calculus, Statistics, Mechanics, Quantum Mechanics
- Bachelor's Thesis: Simulation of cosmic ray acceleration mechanisms

Expected M.Sc. in Astrophysics feb 2025 - 2027
Università degli Studi di Perugia Perugia, Italy

- Relevant coursework: Astrophysics, Cosmology, Advanced Physics, Data Science, Computational and Statistical Methods

Skills

- Programming: Python, C++, ROOT
- Libraries / Tools: Numpy, Scipy, Pandas, Matplotlib, Sklearn, LaTeX, GitHub
- Other: Data analysis, problem solving, computational modeling, analytical thinking, statistical analysis

Projects

- Simulation of cosmic ray acceleration mechanisms: Simulates cosmic ray acceleration at sources (supernovae) using linear DSA and Monte Carlo methods; derives the resulting energy spectrum.
  Link: GitHub Repository
- Propagation of cosmic rays: Simulates 3D random walk propagation of cosmic rays in the galaxy; analyzes the isotropy coefficient and compares it with theoretical predictions.
  Link: GitHub Repository
- Drift motion of charged particle in electromagnetic fileds: Simulates particle trajectories in EM fields; computes drift velocities and compares them with theoretical values using Gaussian and linear fits.
  Link: GitHub Repository

Certifications

- CLA English Proficiency — Università degli Studi di Perugia 2020