

Areli Castrejon

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Professional Summary

Recently graduated astronomer, with 5+ years of experience developing extensive scientific programming projects, seeking to continue working to solve complex problems. Skilled at bringing theoretical models to production in Fortran and Python for efficient problem-solving. Proficient at parsing through data and creating meaningful visualizations. Experienced at working with interdisciplinary groups to reach desired output measures. Available to work for any employer on a zoekjaar visa..

- Problem-solving
- Critical thinking
- Adaptable and flexible
- Team-player
- Organizational skills

Technical Skills

- Highly proficient in Python libraries (Scipy, Pandas, Plotly) for data analysis and visualization.
- Proficient in version control (GIT) to manage updates and conflicts of code.
- Highly proficient in Fortran90 for numerical solvers of Computational Fluid Dynamics problems.
- Exposed to MatLab for data analysis and numerical solvers.
- Proficient at managing models on High-Performance Computing clusters and parallel computing models.
- Highly proficient in LaTeX for the production of scientific manuscripts.

Work Experience

Early Stage Researcher | University of Groningen | Groningen, Netherlands | 2020 - 2024

- Wrote 8,000+ lines of code with 20+ modules utilizing Fortran to simulate complex hydrodynamics problems.
- Processed 2+ TBs of data using Python data-visualization tools to detect trends and envisage results.
- Automated 1,000+ planet-formation models with Bash scripting, optimizing computing resources.
- Worked in an interdisciplinary team, authoring proposals and publications, and achieving network output goals.
- Coordinated weekly research updates by directing Zoom/in-person meetings, fostering scientific discussion.

Research Assistant | NASA/Jet Propulsion Laboratory - Caltech | Pasadena, CA | 2019 - 2020

- Maintained consistent records by drafting monthly research reports, and demonstrating progress to funding sources.
- Ran suites of simulations on a High-Performance Computing cluster to study the effects of dust turbulence, resulting in a manuscript submission.

Graduate Research Assistant | California State University Northridge | Los Angeles, CA | 2017 - 2019

- Onboarded 5 new research students by setting up Linux distributions and packages to diversify research avenues.
- Led weekly meetings within the research group, curated relevant literature for review, resulting in the facilitation of interdisciplinary ideas.
- Utilized MATLAB to import data, produce graphs and data metrics, and used embedded libraries to solve 2nd order differential equations.
- Completed group project, using LabVIEW and servo-mounted camera, to achieve pattern recognition and tracking capabilities.

Education

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| Doctor of Philosophy in Astronomy University of Groningen Netherlands | 2024 |
| Doctor of Philosophy in Astronomy University of Copenhagen Denmark | 2024 |
| Master of Science in Physics California State University Northridge U.S.A | 2019 |
| Bachelor of Science in Astrophysics California State University Northridge U.S.A. | |

Languages

English (Native) | Spanish (Native) | Dutch (Basic)

Awards

Recognition for Independent Study in Astronomy | Pasadena City College 2015