

# Manuel H. Canas

Full Stack Developer | Astrophysicist



## About Me

I am a full stack web developer with a passion for designing and building sites and applications, tackling tough problems, and working in teams.

## Education

### BloomTech

**Title:** Full Stack Developer  
**Date:** Spring 2023 (Expected)  
**GCA Score:** 727

### New Mexico State University

**Title:** M.Sc., Astronomy  
**Date:** Spring 2023 (Expected)  
**Cummulative GPA:** 3.56/4.0

### Udemy

**Title:** Python Developer  
**Date:** June 2022  
**Instructor:** Dr. Angela Yu

### College of Charleston

**Title:** B.Sc., Astrophysics  
B.Sc., Physics  
**Date:** May 2018  
**Cummulative GPA:** 3.25/4.0

## Research Experience

**Focus:** Computational Astrophysics  
**Date:** August 2019 - May 2023  
**Software:**

- Python
- C++
- Fortran90

- MPI
- LaTeX

**Tasks:**

- Run hydrodynamic simulations that model planet formation.
- Generate over 100 GB of data regarding the formation of Kuiper belt objects.
- Document model parameters, simulation results and impact on field.
- Produce publication-quality figures of simulation results.

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**Focus:** Observational Astrophysics

**Date:** August 2014 - May 2018

**Software:**

- IDL
- XSPEC
- LaTeX

**Tasks:**

- Download and clean spectra of quasars from Chandra Space Observatory and XMM-Newton Space Telescope.
- Fit models to the spectra and constrain physical properties of the observed quasars and respective outflows.

## Work Experience

### New Mexico

#### State University

**Location:** Las Cruces, NM

**Title:** Research Assistant

**Advisor:** Dr. Wladimir Lyra

**Start Date:** August '19

**End Date:** Current

### New Mexico

#### State University

**Location:** Las Cruces, NM

**Title:** Teacher Assistant

**Department:** Astronomy

**Start Date:** August '19

**End Date:** May '20

### Wired Minds

**Location:** Greer, SC

**Title:** Tutor

**Subject(s):** Math & Physics

**Start Date:** November '18

**End Date:** July '19

## Wyoming Stargazing

**Location:** Jackson, WY  
**Title:** Stargazing Leader  
**Start Date:** May '18  
**End Date:** October '18

## College of Charleston

**Location:** Charleston, SC  
**Title:** Research Assistant  
**Advisor:** Dr. George Chartas  
**Start Date:** January '16  
**End Date:** May '18

## College of Charleston

**Location:** Charleston, SC  
**Title:** Teacher Assistant  
**Start Date:** August '15  
**End Date:** May '18

# Publications

## Kuiper Belt Densities as Evidence for Multi-Species Streaming Instability and Pebble Accretion

**Status:** In Prep  
**Sub. Date:** January 2023 (Expected)  
**Journal:** TBD

## An Analytical Theory for the Growth from Planetesimals to Planets by Polydisperse Pebble Accretion

**Status:** Submitted  
**Sub. Date:** September 2022  
**Journal:** The Astrophysical Journal

## The Variable Relativistic Outflow of IRAS 13224-3809

**Status:** Accepted  
**Pub. Date:** November 2018  
**Journal:** The Astrophysical Journal  
**Volume:** 867  
**Page:** 14

# Skills

## Programming

### 3+ Years Experience

- Unix/Linux
- Python
- HTML
- CSS
- Javascript
- LaTeX

### 2+ Years Experience

- React.js
- Node.js
- EJS
- Selenium
- MongoDB

### <2 Years Experience

- Cypress
- React Router
- Wordpress
- C++
- Fortran90

## Spoken (Fluent)

- English
- Spanish