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Vedant Chandra

Employment

June, 2020 - Present
Research Intern, *Space Telescope Science Institute*.
Modeling resolved stellar populations with the Hubble Space Telescope.
Supervised by Dr Mario Gennaro

June, 2020 - Present
Summer Fellow, *Institute for Data Intensive Engineering and Science*.
Hunting for the oldest and most metal-poor stars in the Universe.
Supervised by Professor Kevin Schlaufman

November, 2018 - Present
Research Assistant, *Department of Physics & Astronomy, Johns Hopkins University*.
Characterizing white dwarf stars with atmospheric models and spectroscopic data.
Supervised by Professor Nadia Zakamska

Education

2017-Present
B.S. in Physics and Applied Mathematics, *Johns Hopkins University*, Baltimore, MD, USA, (Minor in Space Sciences).
Advised by Professors Tobias Marriage, Beryl Castello, and Charles L. Bennett.

Awards and Honors

2020
Sigma Pi Sigma, *JHU Department of Physics*.
Elected to the national Physics honors society for strong academic achievement.

2020
Summer Student Fellowship, *Institute for Data Intensive Engineering & Science*.
Awarded a $6000 grant for ongoing data-intensive research into metal-poor stars.

2019
Provost's Undergraduate Research Award (PURA), *JHU HOUR*.
Awarded a $3000 grant for ongoing research into white dwarf atmospheres.

2019
Dean's Undergraduate Research Award (now ASPIRE), *JHU URSCA*.
Awarded a $4500 grant for ongoing research into white dwarf binaries.

2017-2020
Dean's List, *JHU Krieger School of Arts and Sciences*.
GPA above 3.5/4.0 for 6/6 semesters.

Invited Talks

August, 2019
Space Telescope Science Institute, *Summer Symposium*.
"White Dwarf Spectroscopy with Machine Learning" (15 min.)

July, 2019
Maryland Space Grant Consortium, *Annual Symposium*.
"White Dwarf Astronomy with Machine Learning" (15 min.)

Research Presentations

January, 2020
NASA, *Human Research Program Investigators Workshop*.
"Multivariate Analysis of Human Health and Performance in Spaceflight Simulation"

October, 2019
Institute for Data Intensive Engineering & Science, *Annual Symposium*.
"Characterizing White Dwarf Spectra with Neural Networks"

April, 2019 **Johns Hopkins University**, *DREAMS Conference*.
"Hunting for Binary White Dwarf Stars with Spectroscopic Analysis"

Grant Allocations

April, 2020 **Space Telescope Science Institute**, *JWST Discretionary Fund ($42,740)*.
"The Initial Mass Function of Resolved Stellar Populations in the Local Group"
PI: Mario Gennaro, Co-I: Vedant Chandra

Observatory Allocations

2020 **Gemini Observatory**, *GHOST Spectrograph*.
"Discovery of mass-dependent gravitational redshifts in white dwarfs", Co-I.

2019-2020 **Apache Point Observatory**, *DIS Spectrograph*.
"Gravitational redshifts of white dwarfs", Co-I.

Skills

- **Programming Environments:** Python, Jupyter, MATLAB, UNIX, CUDA, LaTeX, high-performance cluster computing.
- **Research Experience:** Stellar spectroscopy, signal processing, non-linear dynamics, (un)supervised machine learning, artificial neural networks, statistical modeling, Bayesian statistics and simulations (MCMC, SMC & ABC).
- **Supercomputer Allocations:** Blue Crab cluster, Maryland Advanced Research Computing Center.

Teaching Experience

Fall, 2018 **TA**, *Great Books at Hopkins*, JHU Literature & Philosophy.

Summer, 2018 **TA**, *General Physics I*, JHU Physics & Astronomy.

Outreach

2018-2019 **Volunteer**, *JHU Physics Department Spring Fair*.

References

- Professor Nadia Zakamska, Johns Hopkins University (zakamska@jhu.edu)
- Professor Mark Shelhamer, Johns Hopkins University (mshelhamer@jhu.edu)
- Dr Mario Gennaro, Space Telescope Science Institute (gennaro@stsci.edu)

Peer-Reviewed Publications

[2] **Chandra, V.**, Hwang, H.C., Zakamska, N.L. & Budavari, T. 2020 "*Computational Techniques for the Spectroscopic Analysis of White Dwarfs*" (in prep.)

[1] **Chandra, V.**, Hwang, H.C., Zakamska, N.L. & Cheng, S. 2020 "*A Gravitational Redshift Measurement of the White Dwarf Mass–Radius Relation*" (in prep.)