Vedant Chandra

☎ +1 443 842 1362
✉ vchandra@jhu.edu
in vedant-chandra
🌐 vedantchandra
🐦 vedantchandra

Updated July 31, 2020.

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 C. Schlaufman
January, 2019 - Present	**Research Assistant**, *Department of Biomedical Engineering, Johns Hopkins School of Medicine*. Analyzing astronaut stress and performance during simulated spaceflight. Supervised by Professor Mark J. Shelhamer
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 L. 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.

Peer-Reviewed Publications

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

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

Invited Talks

July, 2020	**Space Telescope Science Institute**, *Summer Symposium*.
	"Fitting the Stellar Birth Function of Resolved Stellar Populations with Approximate Bayesian Computation" (10 min.)
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 as Co-I

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 as Co-I

2020	**Gemini Observatory**, *GMOS Spectrograph*.
	"Discovery of mass-dependent gravitational redshifts in white dwarfs"
	PI: Hsiang-Chih Hwang
2019-2020	**Apache Point Observatory**, *DIS Spectrograph*.
	"Gravitational redshifts of white dwarfs"
	PI: Hsiang-Chih Hwang

Skills

- **Programming Environments:** Python, Jupyter, MATLAB, UNIX, CUDA, LaTeX, high-performance cluster computing.
- **Research Experience:** White dwarfs, stellar binaries, resolved stellar populations, spaceflight physiology.
- **Techniques:** Stellar spectroscopy, signal processing, non-linear dynamics, (un)supervised machine learning, artificial neural networks, statistical modeling, Bayesian statistics and simulations.
- **Supercomputer Allocations:** Blue Crab cluster at the 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	**Head of Logistics**, *JHU MedHacks Hackathon*.
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)