Doyeon Avery **Kim**

Graduate Student in Astrophysics

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Education

Dec 2024	Ph.D in Astrophysics at Columbia University
May 2020	Master in Astrophysics at Columbia University
May 2018	Bachelor of Arts in Astronomy and Physics with honors at University of California, Berkeley

Relevant Skills

General	Computer Vision; Deep Learning; High Dimensional Data Analysis; Inference (Causal); Machine Learning; Statistical Modeling
Scientific data analyzed	HI (GALFA, GASKAP, HI4PI, THOR), H-alpha (WHAM), CO (MAGMA, Dame), OH Emission (GASKAP), UV (HST), X-ray (eROSITA), Galaxy (SDSS-MaNGA), Simulations (Santa-Cruz SAM, CAMELS Illustris tng, FastPM-Nbody)
Language	Fortran; LaTeX; MATLAB; OpenCV; R; Python; SQL
Package	Astropy, Healpy, HMC, MPI, NumPy, Pandas, PyMC3, Pytorch, Sklearn, SciPy, SLURM, Tensorflow, XGBoost

1st Author Publications

in prep	**Kim, D.A. et al.**, *Inferring Causal Relations of Galaxy Formation and Evolution Processes in the SC-SAM*
MNRNS Submitted	**Kim, D.A.**, Villaescusa-Navarro, F., Somerville, R., Pandya, V., *Learning Astrophysical Processes with DeepSets*
	Link to submitted paper https://averykim.owlstown.net/publications/30238-learning-astrophysical-parameters-with-deepsets
ApJ 966, 1, 2024	**Kim, D.A.**, Zheng, Y., Putman, M. *Identifying Associations near the Magellanic Stream*
MNRNS 526, 3, 2023	**Kim, D.A.**, Clark, S., Putman, M. *The Kinematic Structure of Magnetically Aligned HI Filaments*

Non-First Author Publications

APJ Submitted	Putman, M., **Kim, D.A.**, Li, L., Clark, S., *Properties of Galactic Neutral Hydrogen Filaments*
MNRAS Submitted	C. Holm-Hansen*, M.E. Putman, **Kim, D.A.** *Properties of 3D HI Filaments in the Smith High Velocity Cloud*
APJ 960, 1, 2024	Zheng, Y., Faerman, Y., Putman, M., McQuinn, K.B.W., Kirby, E., Burchett, J., Telford, G., Werk, J.K., **Kim, D.A.** *A Comprehensive Investigation of Metals in the Circumgalactic Medium of Nearby Dwarf Galaxies*
MNRAS 464, 3, 2017	Zheng, H., Tegmark, M., Dillon, J.S., **Kim, D.A.,** Liu, A., Neben, A.R., Jonas, J., Reich, P., Reich, W.(2016), *An Improved Model of Diffuse Galactic Radio Emission from 10MHz to 5THz*

∗ work by mentored student

Honors

2024	GSAS FAA Fellowship @ Columbia University
2023	GSAS Summer Travel Grant @ Columbia University
2019-2020	GSAS FEHR Endowment Fellowship @ Columbia University
2018-2023	Dean's Fellowship @ Columbia University
2017	Discretionary Scholarship Award @ UC Berkeley
2016	Berkeley International Office Scholarship
2016	Berkeley Physics Undergraduate Research Scholars
2015	Summer Undergraduate Research Fellowships : Pergo Fellow @ UC Berkeley

Service/Teaching

Astronomer Representative	Microcosms : Collaboration project between The Public Theater and the American Museum of Natural History (AMNH) to create and engage art and science (2023)
Research Mentor	Advising Columbia Physics Undergraduate summer research (2022,2023)
Organizer	ISM Journal Club (Spring 2022, Fall 2022)
Founder/Organizer	CODA : Graduate student and Post-doc weekly seminar (Spring, Fall 2019)
Instructor	*ASTRO UN1904 : Astronomy Lab II (Stars, Galaxies and Cosmology)* @ Columbia University (Spring 2020)
Instructor	*ASTRO UN1904 : Astronomy Lab I (Earth, Moon, and Planets)* @ Columbia University (Fall 2019)
Teaching Assistant	*ASTRO UN1404 : Stars, Galaxies and Cosmology* @ Columbia University (Fall 2018, Spring 2019)
Teaching Assistant	*AY C10 : Intro to General Astronomy* @ UC Berkeley (Fall 2014, Spring 2015)
Tutor, Grader	UC Berkeley

Talks and Presentations

June 2024	Seminar @ University of Notre Dame, Invited Talk
April 2024	Low Density Universe @ Space Telescope Science Institute, Invited Talk
April 2024	AstroCoffee @ JHU, Invited Talk
April 2024	Columbia Data Science Day 2024, Accepted Poster
Feb 2024	XMC Workshop : Milky Clouds Over Manhattan, Invited Contributed Talk
Dec 2023	Microcosm @ Hayden Planetarium AMNH : Stellar Lineage - Pop songs for Pop Stars (illustration)
Dec 2023	Microcosm @ Hayden Planetarium AMNH : Cosmic Bone - Space poetry
July 2023	Interstellar Institute 6, Invited Talk
February 2023	Columbia Astronomy Lunch Talk, Invited Talk
September 2018, 2019	Flatiron Institute Astrofest, Invited Talk
January 2018	231th American Astronomical Society Winter Meeting, Contributed Poster
August 2016	UC Berkeley Summer Research Poster Symposium, Contributed Poster
August 2015	SURF Research Symposium, Invited Talk

References

Mary Putman
Professor @ Columbia University,

Greg Bryan
Professor @ Columbia University,

Rachel Somerville
Group Leader @ CCA at Flatiron Institute,