

Dr. Kirsten N. Blancato

kn.blancato@gmail.com

(845) 649-4596

EDUCATION

Columbia University , Ph.D. in Astrophysics, <i>NSF Graduate Research Fellow</i> Dissertation: “ <i>Decoding starlight with big survey data, machine learning, and cosmological simulations</i> ”	10/2020
Columbia University , M.Phil. in Astrophysics	10/2018
Columbia University , M.A. in Astrophysics	10/2017
Wellesley College , B.A. in Astrophysics	6/2015

DATA SCIENCE TRAINING & SKILLS

Coursework , <i>Columbia Data Science Institute</i> Applied Machine Learning, Causal Inference for Data Science, Unsupervised Learning Theory Foundations of Probabilistic Graphical Models	1/2017 - 12/2018
LSST (Large Synoptic Survey Telescope) Data Science Fellow Training program in software engineering best practices, statistics, machine learning, deep learning, data management, time series analysis, image processing, data visualization, and data communication	8/2016 - 5/2018
Computational skills: Python (~8 years), PyTorch, Keras, high performance computing, SQL, Git, TravisCI	

RESEARCH & WORK EXPERIENCE

Data Scientist , <i>Humankind Investments</i> , New York, NY	1/2021 - present
Data Science Intern , <i>Wayfair</i> , Boston, MA Queried large e-commerce databases to produce clean datasets, trained deep learning models to predict future success of new products, communicated key insights to business stakeholders	6/2019 - 8/2019
Astrophysics Researcher , <i>Columbia University Astronomy Department</i> Built deep learning models to infer fundamental properties of stars from time series data	3/2019 - 10/2020
Astrophysics Researcher , <i>Columbia University Astronomy Department</i> Combined and cleaned datasets from various sources, fit a probabilistic clustering algorithm to the chemistry of stars, performed Bayesian inference to constrain Galactic chemical evolution models, published a lead-author paper in a top journal	2/2017 - 6/2019
Astrophysics Researcher , <i>Columbia University Astronomy Department</i> Analyzed and ran massively parallel simulation code of galaxy evolution on high performance computing clusters, optimized code to process a ~200TB sized dataset, published a lead-author paper in a top journal and presented results at an international conference	9/2015 - 9/2016
Telescope Operator , <i>Wellesley College Whittin Observatory</i> Planned observations and processed images for faculty and student research projects	12/2012 - 5/2015
Undergraduate Physics Researcher , <i>Wellesley College Physics Department</i> Assisted with the experimental set-up of the prototype DRIFT (Directional Recoil Identification from Tracks) dark matter detector, developed software to model dark matter particle collisions in gas	9/2013 - 5/2014

LEADERSHIP EXPERIENCE

Center for Teaching and Learning (CTL) , <i>Columbia University</i> Teaching Consultant (9/2017 - 6/2018) Analyzed participant survey data and gathered feedback from various stakeholders to co-author an advisory report on improving pedagogical training for graduate students across departments	9/2016 - 6/2018
Lead Teaching Fellow (9/2017 - 6/2018) Liaison between the CTL and astronomy TAs to promote pedagogical training, interviewed TAs to learn about their teaching needs, developed and led a series of 5 teaching workshops	
Founder and Director , <i>Columbia Open Labs</i> Managed a team of 5 graduate students to organize science outreach events reaching ~200 high school students, recruited and coached graduate student speakers, made connections with NYC educators	1/2016 - 2/2018

AWARDS & GRANTS

National Science Foundation Graduate Research Fellowship (~\$100,000)	2017
Columbia President's Global Innovation Fund Grant (~\$2,500)	2017
Columbia Student Initiative Grant (\$1,400)	2016 - 2017
Columbia Office of Academic Diversity Student Project Grant (\$1,000)	2016
Wellesley College Trustee Scholar (\$3,000)	2015
Phyllis J. Fleming Prize for Distinction in Physics	2015
Sigma Xi: The Scientific Research Honor Society	2015
Jerome A. Schiff Research Fellowship (~\$1,500)	2014
Sarah Frances Whiting Medal for Achievement in Astronomy	2013

PUBLICATIONS

8. **K. Blancato**. *Decoding Starlight with Big Survey Data, Machine Learning, and Cosmological Simulations*. [Columbia Academic Commons](#), 2020
7. **K. Blancato**, M. Ness, D. Huber, Y. Lu, R. Angus. *Data-driven derivation of stellar properties from photometric time series data using convolutional neural networks*. [Submitted to The Astrophysical Journal](#)
6. Y. Lu, R. Angus, M. A. Agueros, **K. Blancato**, M. Ness, D. Rowland, J. L. Curtis, and S. Grunblatt. *Astraea: Predicting Long Rotation Periods with 27-Day Light Curves*. [The Astronomical Journal](#), 160, 168, 2020
5. M. Ness, K. Johnston, **K. Blancato**, H-W. Rix, A. Beane, J. C. Bird, K. Hawkins. *In the Galactic disk, stellar [Fe/H] and age predict orbits and precise [X/Fe]*. [The Astrophysical Journal](#), 883, 117, 2019
4. **K. Blancato**, M. Ness, K. Johnston, J. Rybizki, M. Bedell. *Variations in α -element ratios trace the chemical evolution of the disk*. [The Astrophysical Journal](#), 833, 34, 2019
3. **K. Blancato**, S. Genel, and G. Bryan. *Implications of galaxy buildup for putative IMF variations in massive galaxies*. [The Astrophysical Journal](#), 845, 136, 2017
2. G. Zhou, J. E. Rodriguez, ..., **K. Blancato**, et al. *KELT-17b: A hot-Jupiter transiting an A-star in a misaligned orbit detected with Doppler tomography*. [The Astronomical Journal](#), 152, 5, 2016
1. J. Kartaltepe, M. Mozena, ..., **K. Blancato** et al. *CANDELS Visual Classifications: Scheme, Data Release, and First Results*. [The Astrophysical Journal](#), 221, 11, 2015