

Jonah Goldfine, M.S. (He/They)

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RESEARCH INTERESTS: Astrostatistics; Planetary Science; Data Science; Machine Learning

EDUCATION

Macquarie University

Faculty of Science and Engineering

MRes in Astrostatistics

Thesis: *JWST-AMI Image Deconvolution Using AI*

Sydney, NSW, Australia

July 2025 - Present

University of Denver

Ritchie School of Engineering and Computer Science

M.S. in Data Science

Capstone Projects: *Using Neural Networks to Label Artificial VRO Data* | *Mental Health in the Tech Industry*

Denver, CO, USA

2022 - March 2024

New York University

College of Arts and Sciences

B.S. in Physics with Astronomy Minor

New York, NY, USA

2018 - 2022

TEACHING & TUTORING EXPERIENCE

TEACHING

Adjunct Instructor

General Physics II Recitation & Laboratory

- Second semester physics course geared towards pre-medicine track and non-physics STEM undergraduate students
- Topics include electro- and magneto-statics; electromagnetic waves; lenses; circuits and Kirchoff's Laws

New York University

20 hours/week January 2024 - May 2024

Adjunct Instructor

Physics III Recitation

- Third semester physics course required for undergraduate physics students
- Topics include harmonic and coupled oscillators; resonance and normal modes; waves (mechanical, sound, and electromagnetic); fourier series and transformation; reflection, diffraction, and interference

New York University

20 hours/week September 2023 - December 2023

Adjunct Instructor

Quarks to Cosmos Laboratory & Recitation

- General education course geared towards non-STEM undergraduate students
- Topics include the basics of the Big Bang and expansion of the universe; the formation and evolution of stars and planets; the fundamentals of particle physics

New York University

20 hours/week September 2022 - May 2023

TUTORING

Private Tutor

Math, Science, & Programming

- Math through Calculus III and Linear Algebra | Elementary through High School Sciences | All Levels of Physics and Astronomy | Data Science and Machine Learning
- One-on-one tutoring via zoom

Varsity Tutors

August 2024 - May 2025

Group Tutor

General Physics I - II

- Kinematics and E&M Physics Courses for non-physics undergraduate science majors
- Tutored Groups ranging from 1 to 10 in person

New York University

September 2021 - May 2022

RESEARCH AFFILIATIONS

Research Assistant

New York University Center for Cosmology and Particle Physics

Advisor: *David W. Hogg*

New York, NY

15 hours/week March 2020 - May 2025

Guest Researcher

Flatiron Institute, Center for Computational Astrophysics

Advisor: *Adrian Price-Whelan*

New York, NY

5 hours/week October 2022 - May 2025

RESEARCH PROJECTS

Light-curve Variability Analysis

New York University & Flatiron Institute | March 2020 - May 2025

- Analyzing binary-star parameter sampling generated from *SDSS-IV APOGEE* radial-velocity data using *The Joker* to better understand light-curve variability in *TESS* binary candidates
- The goal was to find patterns in the orbital parameter sampling and periodograms in relation to light-curve variability
- Project resulted in two AAS Poster presentations and an in prep paper

Using Neural Networks to Classify Artificial VRO Data

University of Denver | January 2024 - March 2024

- One of two capstones for Master's Degree
- Photometric LSST Astronomical Time-Series Classification Challenge (PLAsTiCC) Data Set
- Used Multilayer Perceptron to classify objects in data into labels defined by PLAsTiCC
- Found two successful models, but also found that the PLAsTiCC data had an insufficient number of features to take advantage of Neural Networks

Mental Health in Tech

University of Denver | January 2024 - March 2024

- One of two capstones for Master's Degree
- Data comes from mental health survey of tech industry workers
- Used various machine learning methods to find feature importance and predict whether or not employees would seek treatment

PRESENTATIONS

Goldfine, J., Hogg, D. W., & Price-Whelan, A. (January 2023). [Comparisons of TESS light-curve variations with binary-star parameters from APOGEE and The Joker](#). *Bulletin of the AAS*, 55(2), Presented as iPoster at AAS 241

Goldfine, J., Hogg, D. W., & Price-Whelan, A. (January 2024). [Link between light-curve variability from TESS with binary-star parameters from The Joker and APOGEE](#). *Bulletin of the AAS*, 56(2), Presented as iPoster at AAS 243

WORK EXPERIENCE

Technical Support Assistant

NYU Courant Institute of Mathematics

New York, NY

20 hours/week June 2021 - August 2022

- Provided technical support for Courant staff, faculty, researchers, and graduate students computers and network
- Troubleshoot and repaired hardware issues, installed Linux onto desktops, maintained Apple and Windows devices
- Maintained and assisted Courant members in the use of A/V Equipment

Camp Counselor

North Star Camp for Boys

Hayward, WI

138 hours/week Summer 2016 - Summer 2019

- Rocketry (Program Head), Arts & Crafts (Lead Instructor), Swimming (Lifeguard and Instructor), Biking (Assistant Instructor)

PROGRAMMING

- Python (Including JAX)
- R
- Julia
- SQL
- MongoDB
- Java
- OpenSpace
- C++

TOOLS

- Monte Carlo (The Joker)
- Periodograms (Lomb-Scargle, Box Least Squares)
- Visualizations (Matplotlib, plotly, seaborn)
- Deep Learning (Pytorch, Tensorflow)
- Data Management (Pandas)
- Data Analysis (sklearn, astropy, numpy, scipy)

EXTRACURRICULAR ACTIVITIES

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|---|---------------------------------|
| Member of NYU Society of Physics Students | December 2019 - May 2022 |
| <ul style="list-style-type: none">- Participate in club events and meetings- Participate in mentor and mentee program | |
| President of NYU Astronomy Club | September 2020 - September 2021 |
| <ul style="list-style-type: none">- Organize club through COVID Pandemic- Invite speaker presentations by Physics and Astrophysics Professors and Researchers | |
| Head of Internal Events at Rogue Aerospace | December 2020 - June 2021 |
| <ul style="list-style-type: none">- Planned and lead full team internal events, including large team meetings, career development events, and team building events- Competition rocket building team | |
| Head of Outreach at Rogue Aerospace | September 2020 - December 2020 |
| <ul style="list-style-type: none">- Served as point of contact between potential sponsors and team- Organized outreach events at local primary and secondary schools | |
| Operations Team Member at Rogue Aerospace | December 2019 - September 2020 |
| <ul style="list-style-type: none">- Assist communications between subteams- Ensure subteams meet certain deadlines for NASA University Student Launch Initiative | |

ADDITIONAL INTERESTS: DND, Biking, Camping, Science Fiction & Fantasy Media
