

EDUCATION

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- Ohio State University**

Columbus, OH

Aug 2020 - Dec 2024

 - B.S. Physics, Astronomy & Astrophysics (Research Distinction)*
 - Minor: Mathematics*
 - Courses: Honors E&M I/II, Honors Quantum Mechanics I/II, Statistical Mechanics, Advanced Physics Laboratory, Cosmology, Classical Mechanics I/II, Big Data Analytics, Methods of Astronomical Observation & Data Analysis, Real Analysis, Applied Statistics, Python, MATLAB, Flight Vehicle Dynamics, Thermodynamics, Electrical Circuits and Electronic Devices*
 - GPA: 3.70/4**

PUBLICATIONS

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- (In prep.) **Lenhart, C.**, Johnson, M. C., Wang, J., Asnodkar, A. P., Petz, S., Strassmeier, K. G., Ilyin, I. "*High-Resolution Cross-Correlation Transmission Spectroscopy of KELT-20b*",

PRESENTATIONS

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- Lenhart, C.**, Johnson, M. C., Wang, J., Asnodkar, A. P., Petz, S., Strassmeier, K. G., Ilyin, I. "*Analysis of KELT-20b's Atmospheric Dynamics Using PEPSI: Line Profiles During Transit and Velocity Offsets*" 2024, AAS 243, 135, 179.09
 - Lenhart, C.**, Johnson, M. C. "*Analysis of an Ultra Hot Jupiter's Atmosphere*", Ohio State Department of Astronomy Summer Undergraduate Research Program in Astrophysics Symposium

RESEARCH EXPERIENCE

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- Department of Astronomy - Dr. Marshall C. Johnson**

Ohio State University

May 2023 - Present

 - Undergraduate Researcher (Full-time, Part-time)*
 - Characterized ultra hot Jupiter atmospheric dynamics using transmission spectroscopy data
 - Implemented Doppler shadow removal into atomic species detection pipeline
 - Detected novel atomic constituents present in day-to-nightside winds
 - Identified potential three-dimensional equilibrium processes occurring in KELT-20b's atmosphere
 - Department of Materials Science and Engineering - Dr. Sheikh Akbar**

Ohio State University

June 2022 - May 2023

 - Undergraduate Research Assistant (Part-time)*
 - Synthesized inorganic materials in aqueous media with hydrothermal method to produce crystalline nanostructures, trained in SEM and XRD to identify morphologies and composition
 - Employed sensor fabrication methods for building metal oxide gas sensors; determined sensing properties with electrical measurement instruments
 - Compiled sensor data from current literature into centralized database, with the aim of developing a platform to identify trends in sensor selectivity and sensitivity

WORK EXPERIENCE

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- Wyzant**

Online

June 2022 - Present

 - Private Tutor (Independent Contractor)*
 - Created individualized study plans for students, solely managing communications and scheduling; clients ranged from middle school to college students of math, physics, standardized testing
 - Maintained a 5.0/5.0 rating with 6 unsolicited testimonials and 30+ ratings; recommended as a top tutor for in-person tutoring in Columbus, OH and for online tutoring statewide in calculus and physics
 - Mathematics and Statistics Learning Center**

Ohio State University

December 2021 - August 2022

 - Math Tutor (Part-time)*
 - Communicated with students, scheduled appointments, and tutored calculus to over 20 students weekly
 - Trained in andragogical methods; approached tutees with focus on inquiry-based learning

PROJECTS

● Machine Learning Project: Linking Writing Processes to Writing Quality

- Predicted the overall writing quality of mock SAT essays using dataset of keystroke logs stripped of alphanumeric information
- Derived original features and those from current literature concerning the real-time prediction of writing quality with keystroke data
- Used sk-learn's Histogram-Based Gradient Boosting Regression Tree; tuned hyperparameters, employed cross-validation, analyzed feature importance
- Placed in the 63rd percentile in my first Kaggle competition

● Make OH/IO 2023 Competition

- Conceptualized an updated cleanroom garment with tear sensors, improved boot covers, and redesigned masks for use in Intel's semiconductor factories
- Designed a proof-of-concept using an Arduino board and cleanroom garment materials
- Received 1st place in the competition

● Buckeye Solar Racing

Ohio State University

Aerodynamicist

August 2021 - August 2022

- Researched performance of various solar car geometries, designed canopy and aeroshell in SolidWorks, ran CFD with STAR-CCM+
- Meshed existing canopy with photogrammetry software, compared prototypes to physical model, finalized design, integrated with remainder of solar car

● NASA L'SPACE Mission Concept Academy

Online

Aerospace Engineer

May 2021 - August 2021

- Collaborated with 10-person interdisciplinary team to conceptualize a mission to drill water-ice from the lunar south pole, including site selection, rover design, system integration, risk mitigation, and success criteria
- Modeled entry, descent, and landing of a lunar rover; prototyped compact lunar regolith drill; formulated a CONOPS; budgeted instrumentation; produced a Preliminary Design Review

SKILLS

- **Languages:** Python, MATLAB, Mathematica, HTML/CSS
- **Tools:** Bash/Linux, Git, L^AT_EX, High-performance Computing, Machine Learning, Adobe Creative Suite

HONORS AND AWARDS

- Ann Slusher Tuttle Undergraduate Scholarship - Ohio State Department of Astronomy - January 2024
- Undergraduate Research Scholarship - Ohio State College of Arts and Sciences - December 2023
- MakeOHI/O 2023 1st Place (Intel) - March 2023
- Dean's List - 5 semesters
- Eagle Scout - July 2020
- Youngstown CityScape Beautification Watch Award - November 2019