

Christopher J. Lombardi

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Summary

Applied Physics and Computer Science student with research and industry experience in machine learning, computer vision, and data-driven modeling. Proven track record of developing end-to-end ML solutions and presenting research at national conferences. Seeking roles in data science or ML engineering.

Skills

Programming Languages: Python, C++, Java, C, SQL

Machine Learning & Data Science: TensorFlow, Pytorch, Scikit-learn, XGBoost, Pandas, NumPy, Matplotlib, Seaborn

Tools & Platforms: Git, GitHub, Jupyter, Linux, Windows, Bash Scripting, VS Code

Experience

Thorlabs Vytran Division, Research Intern

Morganville, NJ

May 2025 – August 2025

- Designed an end-to-end machine learning model to classify fiber cleave images and predict optimal parameters for **5 fiber types**.
- Engineered a custom CNN model head on a pre-trained EfficientNet backbone, leveraging transfer learning to accuracy of over **90%** with F1 score of **88%** for unbalanced data.
- Built and integrated an XGBoost regression model to predict the precise tension adjustment needed to correct a suboptimal cleave, providing actionable feedback to operators

ISWS REU Program, Research Intern

Newark, NJ

May 2024 – July 2024

- One of **eight** students selected to participate in NFS funded research.
- Developed a Python-based pipeline to process and analyze time-series data for **8** stellar targets, writing a paper on the subject submitted to AAS journal

New Jersey Institute of Technology, Research Assistant

Newark, NJ

Aug 2023 – Present


- Analyzed Kepler mission light curves for **8 KIC stars**, identifying and characterizing hundreds of stellar flare events for frequency analysis
- Presented findings at the URI Symposium for NJIT and the Cool Stars Conference.

Presentations and Publications

Understanding the Sun's Magnetic Cycle with COFFIES, AAS Meeting

Jan 2025

Temporal Variations in Asteroseismic Frequencies of KIC 6106415: Insights from GOLF and Kepler Observations

arxiv.org/abs/2503.05076 

- Studied temporal oscillation shifts in time-series data using space-based observations, connecting findings to solar-stellar activity cycles.

Projects

Personal Portfolio Website

christopherjlombardi.com 

- Designed and deployed a portfolio website to showcase research, projects, and publications.
- Built using **Flask (Python)**, with responsive front-end design in **HTML, CSS, and Bootstrap**.
- Implemented modular project pages, interactive components, and deployed on a cloud server with custom domain.

Personal Training Website

c-lombardi-23/newfitphysicist

- Full-Stack web app built with **Python, CSS, HTML, Javascript, SQLAlchemy** 

Education

BS **New Jersey Institute of Technology**, Applied Physics and Computer Science

Aug 2023 - Present

- GPA: 3.93/4.0

AS **Essex County College**, Physics

September 2022 - August 2023

- GPA: 4.0/4.0

Honors and Awards

Undergraduate Student of the Year, NJIT Department of Physics

Spring 2025