

# Christopher J. Lombardi

Newark, NJ 07105 | cjl78@njit.edu | 8623543910 | [linkedin.com/in/chrisjameslombardi](https://www.linkedin.com/in/chrisjameslombardi) | [github.com/c-lombardi23](https://github.com/c-lombardi23)

## 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, Prometheus, Grafana, Vue.js

## Experience

**Thorlabs Vytran Division**, Research Intern

Morganville, NJ

May 2025 – Aug 2025

- Designed an end-to-end machine learning pipeline using **TensorFlow** to classify fiber cleave images and predict optimal cleave input parameters for **5 fiber types**.
- Engineered a custom CNN model head on a pre-trained EfficientNet backbone, leveraging transfer learning to achieve testing accuracy of over **90%** with an F1 score of **88%** for unbalanced dataset
- Integrated custom XGBoost regression model to predict the precise tension adjustment needed to correct a suboptimal cleave, providing precise results within a **5%** tolerance

**ISWS REU Program**, Research Intern

Newark, NJ

May 2024 – July 2024

- Selected as 1 of 8 students for highly competitive, fully funded NSF research experience
- Developed a Python-based pipeline to process and analyze time-series data for **8** stellar targets, composing **first-authored** paper on the subject, submitted to AAS journal

**New Jersey Institute of Technology**, Research Assistant

Newark, NJ

Aug 2023 – Present

- Analyzed light curves from NASA space mission, *Kepler*, identifying and characterizing hundreds of stellar flare events for precise frequency analysis
- Presented findings at the URI Symposium for NJIT and the Cool Stars 22 Conference

## Projects

**Personal Portfolio Website**

[christopherjlombardi.com](https://christopherjlombardi.com) 

- Designed and deployed a portfolio website to showcase research, projects, and publications, increasing visibility to recruiters and collaborators
- Built using **Flask**, with responsive front-end design in **HTML**, **CSS**, and **Bootstrap**.
- Integrated **Prometheus** and **Grafana** dashboards to track site metrics, enabling data-driven optimization

**Personal Training Website**

[thefitphysicist](#) 

- Developed a full-stack web app using **Python**, **JavaScript**, **SQLAlchemy**, **HTML**, and **CSS**
- Implemented user authentication, database-driven blog entry tracking, improving usability and retention

## Presentations and Publications

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

[arxiv.org/abs/2503.05076](https://arxiv.org/abs/2503.05076) 

- Applied data cleaning and signal processing techniques to analyze *Kepler* light curves, achieving oscillation frequency measurements within microhertz level precision

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

Jan 2025

## Education

**BS** **New Jersey Institute of Technology**, Applied Physics and Computer Science - GPA: 3.93/4.0

Aug 2023 - Present

- Relevant Coursework: Data Structures and Algorithms, Programming Language Concepts, Intensive Programming in Linux, Computer Systems, Database Design, Classical Mechanics

**AS** **Essex County College**, Physics - GPA: 4.0/4.0

Sep 2022 - Aug 2023

## Honors and Awards

**Undergraduate Student of the Year**, NJIT Department of Physics

Spring 2025