

# Chloy Costa



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## EDUCATION

### CHRIST (Deemed to be University)

Master of Computer Applications

Bangalore, Karnataka

June 2024 – Present

### Parvatibai Chowgule College of Arts and Science

Bachelor of Science in Physics, 78.27%

Margao, Goa

Sept 2021 – May 2024

## PROJECTS

### Photometric Redshift Estimation | Python, Scikit-Learn, Pandas, XGBoost, Astropy

[GitHub](#)

- Architected a hybrid pipeline combining statistical clustering (K-Means, GMM) with a stacked ensemble of boosting models (XGBoost, NGBoost) to estimate galactic redshifts.
- Implemented a multi-method outlier detection strategy (Isolation Forest, Local Outlier Factor, Z-score) and engineered astronomical features to enhance data quality.
- Achieved high predictive accuracy with an  $R^2$  score of 0.84 and an RMSE of 0.21, demonstrating the model's robustness.

### Student Attendance Monitoring System | Python, OpenCV, YOLOv8, TensorFlow, MySQL

[GitHub](#)

- Built a real-time attendance system with emotion tracking using computer vision and YOLOv8 model trained on 20+ student dataset for automated detection and monitoring in classroom environments.
- Leveraged transfer learning with a pre-trained ResNet model in TensorFlow to bootstrap the facial recognition component.
- Integrated DeepFace for emotion analysis and logged all attendance and engagement data to a MySQL database using SQLAlchemy.

## WORK EXPERIENCE

### Full Stack Developer — CHRIST (Deemed to be University), Bangalore

July 2024 – Aug 2024

- Domain: Full Stack Development and Data Analytics)
- Created a full-stack platform using Next.js, Node.js with JWT authentication, and MongoDB serving 150+ government beneficiaries across 15+ Karnataka districts, streamlining data collection and analysis.
- Built comprehensive admin dashboard with real-time analytics processing 200+ survey responses, enabling government officials to track scheme effectiveness through automated data visualization.
- Developed a bilingual questionnaire system supporting 95% completion rate with auto-save functionality, increasing rural accessibility by 40% through Kannada language support.

## WORKSHOPS

### Astrophysics & Cosmology Workshop | IISc Bangalore, Ethical Edufabrica & Pravega

2025

- Gained hands-on experience in Optical Astrophysics, covering photometric redshift estimation, spectroscopy, and data analysis using IRAF.
- Explored Radio Astrophysics techniques, including data reduction and processing with CASA (Common Astronomy Software Applications).
- Studied X-ray Astrophysics concepts such as pulsars and X-ray binaries, with an introduction to data analysis using Heasoft.

## CERTIFICATIONS

### Introduction to Relational Databases in SQL | Data Camp

July 2025

### Intermediate SQL | Data Camp

June 2025

### Data Manipulation In SQL | Data Camp

June 2025

## LEADERSHIP AND EXTRACURRICULAR

Served as **President of the Physics Club** and a member of the student council **Advitiya Netrutva** for my college. Successfully organized state-level events and fostering significant student engagement in STEM activities.

Appointed as **ACC Music Head** for the Science Deanery, coordinating musical performances and events across the deanery.

## TECHNICAL SKILLS

**Data Science & ML:** Python, R, Scikit-learn, Pandas, NumPy, Matplotlib, OpenCV, TensorFlow, PyTorch, XGBoost, Astropy

**Databases & Analytics:** MySQL, MongoDB, PostgreSQL

**Web & Mobile Dev:** JavaScript, React, Next.js, Node.js, Express.js, Streamlit, HTML5, Tailwind CSS

**Developer Tools:** Linux (Fedora), Git