

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

Margao, Goa

Sept 2021 – May 2024

PROJECTS

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

[GitHub](#)

- Engineered a hybrid, 5-model stacked ensemble using NGBoost as a meta-learner, integrating cluster-derived features from K-Means and GMM to predict galactic redshifts.
- Developed a 50+ feature set by implementing a conservative 3-method outlier detection (Isolation Forest, LOF, Z-score) and engineering 12 astronomical features (color, flux, and radius ratios) from base photometry.
- 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

Image & Data Processing for Astronomical Research - Indian Institute of Astrophysics August 2025 - Present

- Learning and applying data reduction techniques, including bias subtraction, flat-fielding, to prepare large-scale astronomical images from the Himalayan Chandra Telescope (HCT) for further analysis.
- Beginning to explore Python-based algorithms for image restoration and de-convolution, focusing on preparing the data and understanding the required inputs for these processes.

Software Developer — Archdiocese of Goa and Daman, India

September 2025 – October 2025

- Created a Chrome extension with Haar Cascade face detection, processing and storing 20+ emails using IndexedDB storage (50MB+ capacity) and auto form filling across required web application.
- Engineered smart cropping algorithms for face + torso identification, time adjustment systems (-25min automation), and intelligent sender-based image merging with 100% autofill accuracy.
- Implemented cross-browser compatibility, drag-and-drop functionality, React integration, and comprehensive error handling with detailed logging for exposition email processing automation.

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

July 2025 – Sep 2025

- Created a full-stack platform using Next.js, Node.js with JWT authentication, and MongoDB serving 150+ government beneficiaries across all 31 Karnataka districts, streamlining data collection and analysis.
- Designed a comprehensive admin dashboard with real-time analytics capable of processing 250+ survey responses, enabling officers to track scheme effectiveness through automated data visualization.
- Developed a bilingual questionnaire system supporting 95% completion with auto save functionality, increasing rural accessibility through Kannada language support.

CERTIFICATIONS

AWS Academy Graduate - AWS Academy Cloud Foundations | AWS Academy

August 2025

Introduction to Relational Databases in SQL | Data Camp

July 2025

Intermediate SQL | Data Camp

June 2025

Data Manipulation In SQL | Data Camp

June 2025

Astrophysics & Cosmology Workshop | IISc Bangalore

February 2025

TECHNICAL SKILLS

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

Databases & Analytics: MySQL, MongoDB, PostgreSQL

Web: JavaScript, React, Next.js, Node.js, Express.js, Streamlit, HTML5, Tailwind CSS

Developer Tools: Linux (Fedora), Git, C, Bash, Fortran