



SALMA BHAR

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🐙 [she/her](https://github.com/Salma-Bhar-CWRU/Portfolio)

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EDUCATION

Case Western Reserve University, Bachelor of Science in Computer Science

Aug 2022 – May 2026

Relevant Coursework: Data Analysis, Training Regression Models, Machine Learning, Data Structures, Intro to AI, Databases, Algorithms, Linear Algebra, Statistics

Cleveland, OH

PROFESSIONAL EXPERIENCE

AP Computer Science Teaching Assistant, Microsoft TEALS

Aug 2024 – present

- Collaborated with a team of 2 Teaching Assistants and 1 teacher to create an engaging learning environment for 20+ AP Computer Science and Data Science students

Cleveland, OH

AI Team Research Member, Tunisian Space Association (TUNSA)

Apr 2024 – present

- Built a Machine Learning model to predict the age of buildings through satellite images from a dataset of 35,000 entries across 5 countries of over a 100-year timespan
- Wrote research paper reviews on the trends in machine learning for space applications

Hybrid

Break Through Tech AI/ML Fellow, Cornell Tech

May 2024 – present

- Selected from 3000+ applicants for a 18-month AI, ML, and Data Science fellowship.
- Completed a 9-week Machine Learning Foundations summer course.
- Engaged in the AI-Studio, working in teams on real-world datasets and projects mentored by industry professionals, with opportunities for career development and mentorship.

Virtual

Undergraduate Researcher Intern, Solar Degradation and Lifetime Extension Center

May 2023 – present

- Modeled and analyzed data in an interdisciplinary research project in Data Science and Materials Science
- Edited and optimized 5+ past graduate and postdoctoral colleagues' collaborative scripts through Gir and Jira to be up to date with the data's evolution patterns using dplyr, ggplot2, and tidyverse R packages

Cleveland, OH

Junior Student Web Programmer, Content Editor, Case School of Engineering

Feb 2023 – Dec 2023

- Created and edited content of 30+ new Drupal 6/7/8 websites and managed users while working with 2 senior Software Developers
- Provided training for new employees and assistance for 5 professors who wish to edit web pages

Cleveland, OH

PROJECTS

Detecting Objects in Autonomous Driving, Latitude AI

Aug 2024 – present

Developed a 3D object detection system for autonomous driving using convolutional neural networks (CNNs) and transfer learning to classify objects from images. Innovated by converting perspective images to bird's eye view (BEV) and incorporating depth information to enhance detection accuracy. This project advanced vehicle safety and autonomy by leveraging deep learning techniques in computer vision.

A Data-Driven Approach to Enhancing Solar Cell Longevity and Efficiency, SDLE Center

May 2023 – Dec 2024

Collaborated with a multidisciplinary team to model degradation patterns in photovoltaic cells using 490+ data measurement files across 3 architectures. Utilized R packages for data visualization and analysis, working with High Performance Computing (HPC) clusters with 250+ servers, including 60+ GPU nodes. Presented a poster at CWRU Intersections and the SUNY Buffalo Undergraduate Research Conference.

Machine Learning Approach to Predicting Countries' Happiness Index, Cornell Tech

Jul 2024

Developed an ML model to predict the happiness index of countries using data from a World Happiness Report Dataset, comprising 1562 records. Implemented 4 regression models, including Decision Tree Regressor, Random Forest Regressor, and Gradient Boosting Regressor, optimizing them through hyperparameter tuning and feature engineering to achieve an R-squared of 0.7912.

LEADERSHIP & VOLUNTEERING

Global TEDx Experience with 100+ attendees

- Lead Organizer of TEDxPiloteAriana, Tunisia
- Co-Lead Organizer of TEDxYouth@UWCISAK, Japan
- Speaker at TEDxYouth@Tokyo: "What a Rubik's Cube can teach us about Global Issues", Japan
- Financial Committee Member of TEDxCWRU, Cleveland OH
- TED Circles Host and License Holder, Virtual

AWARDS

- Veale Snyder Fellowship, a 12-month fully funded program focused on Entrepreneurship and Professional Development
- Expedition EY Advanced Level Certificate of Completion by Ernst & Young 2024
- SURES \$4,200 Undergraduate Research Scholarship to work on my own research project in summer 2023
- Fall 2022 Women In Tech Professional Development Scholars Program at Case Western Reserve University
- Massie CIT'66 Endowment, Women In Tech \$1000 Fund to attend the Grace Hopper Celebration in 2023 and 2024
- Rewriting the code Fellowship, She Code Africa Member
- Full Scholarship recipient: Davis United World College Scholarship, CWRU Grant