

RHEA GOSWAMI

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EDUCATION

CORNELL UNIVERSITY

Incoming Freshman, Bachelor of Science, Engineering
Intended Major: Electrical and Computer Engineering

Ithaca, NY
Expected June 2026

THOMAS JEFFERSON HIGH SCHOOL FOR SCIENCE AND TECHNOLOGY

Cumulative GPA: 4.44/4.0

Relevant Coursework: Biotechnology Senior Research Lab, Artificial Intelligence 1, DNA Science 1, DNA Science 2, Automation and Robotics Microsystems, AP Physics, AP Biology, and AP Computer Science A

Alexandria, VA
Expected June 2022

WORK EXPERIENCE

GEORGETOWN UNIVERSITY

Computer Vision Intern

Washington, D.C.
August 2021 – Present

- Developed a computer vision algorithm utilizing the “You Only Look Once” (YOLOv5) framework for the identification of monarch butterfly instars and healthy vs. diseased instars with 90% prediction accuracy using TensorFlow and PyTorch
- Created a novel dataset of 1,000+ annotated and tested images of the five monarch butterfly instars

RESEARCH PROJECTS

CITRUS DISEASE IDENTIFICATION & LIFETIME PREDICTION ALGORITHM

July 2021 – Present

Independent Project Under the Guidance of an FDA Staff Researcher

- Devised a convolutional neural network (CNN) algorithm to diagnose a range of citrus diseases (from canker to greening) and a prediction of the life expectancy of the plant with 86% prediction accuracy

TWO-STAGE FRAMEWORK FOR SKIN LESION SEGMENTATION

November 2020 - April 2021

- Formulated an algorithm that first removes the hair for dermoscopic images (preprocessing) and then segments the image to identify skin lesions using DeepLab-V3+ with 88% prediction accuracy

LUNG LESION IDENTIFICATION ALGORITHM FOR CT SCANS

April 2020 - September 2020

- Engineered an algorithm using deep dilated convolutions to accurately identify lesions in lung cancer screening thoracic computed tomography (CT) scans with marked-up annotated lesions with 90% prediction accuracy

PERSONAL PROJECTS

SMART ENVIRONMENT MONITORING SYSTEM

September 2020 – Present

- Monitoring air quality, water quality, and health of crops in a controlled agricultural system through the use of microcontrollers (Arduino), distributed sensors, and Internet of Things (IoT)

ACTIVITIES

ENVIRONMENTAL JUSTICE COALITION

Co-Founder & Executive Director

Herndon, VA
March 2021 – Present

- Aiming to mobilize the next generation of activists in the fight for intersectional environmental justice and uplifting BIPOC
- Leading a national team of 30+ students to lobby 7 congressional legislations and partnered with 10+ national organizations
- Creating climate change educational curriculums for public schools in New York City, NY and Baltimore, MD
- Featured by the Children’s Environmental Health Network and Association of Maternal and Child Health Programs

ADDITIONAL

Technical Skills: Advanced in Java, Python, HTML/CSS; Proficient in R, MATLAB, GNU Octave, TensorFlow, and PyTorch

Awards: Gold Medalist in USFS Moves in the Field (Figure Skating), Virginia State Winner in Social Science and Science in the Honors Category (State - Virginia), Virginia National Academic Decathlon Team Member, Bronze Medalist in Essay in Honors Category (Nationals)