Laasya Acharya

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EDUCATION

University of California, Berkeley — Berkeley, CA
B.S. in Engineering, GPA: TBD/4.0 — *Aug 2025 - May 2029*

William Mason High School — Mason, OH
Honors Diploma, GPA: 4.36/4.0 — *Aug 2021- May 2025*

- Seals: Student Engagement, Technology, Science, Fine and Performing Arts, Citizenship, College-Ready

SKILLS

Programming and Machine Learning: Python, Machine Learning (TensorFlow, MATLAB, Keras, Pandas), HTML & CSS, JavaScript, Java, React Native, Data Analytics, Dataset Development & Maintenance
Design: CAD (Fusion360), Microsoft Office Certified (Excel, Word, PowerPoint), Canva, Adobe Premier Pro, Adobe Illustrator, Adobe Photoshop

PROFESSIONAL EXPERIENCE

The Ceres Organization — Mason, OH
Founder and President — *August 2021—Present*

- Raises awareness about food insecurity through STEM research, advocacy, and educational programs worldwide
- Hosts an annual virtual summit with discussions, research, and networking opportunities with scientists and activists
- Offers workshops and programs year-round for students of all ages to explore and develop their interests in STEM
- Founded on the ideals of the Ceres research

Healthcare for All Ohioans — Columbus, OH
Social Media Manager — *April 2024—Present*

- Develop and manage all social media content (graphics and videos) across Facebook, Instagram, Twitter, and TikTok, highlighting healthcare issues
- Engage with diverse communities, with a focus on veterans, military families, rural populations, and low-income families
- Support veteran and military family access to healthcare, both within and outside the VA system

AgSensing Lab — Columbus, OH
Student Research Intern — *May 2024—Jul 2025*

- Collaborate with the AgSensing Lab under Dr. Sami Khanal to develop multi-output regression models predicting crop nutrient content (e.g., Nitrogen, Phosphorus, Potassium) from spectral reflectance data
- Process and clean over 80,000 spectral imaging data points, including averaging reflectance values across multiple plant samples per location
- Integrate spectral datasets with nutrient concentration data using unique SampleID identifiers to create high-quality training datasets for predictive modeling
- Apply regression-based models to explore relationships between spectral signatures and multiple agricultural output variables
- Collaborate with the research team to optimize model performance and validate predictions, and refine data preprocessing workflows

Mason City Council Member and Candidate Joy Bennett — Mason, OH
Campaign Literature & Social Media Intern — *Sep 2023—Nov 2023*

- Create engaging content across multiple social media platforms, including Facebook, Instagram, Twitter, LinkedIn, and TikTok.
- Organize campaign events, including phone banks, to mobilize volunteers and engage directly with voters
- Contribute to the campaign until its conclusion following the candidate's victory

PROJECTS

Implementing a Novel Multimodal Neural Network Approach using Dynamic Hyperparameter Selection within an Unmanned Aerial Vehicle for the Early Detection of Crop Diseases

- Dataset: 2,000 expert-validated inputs covering 15 crop diseases
- Data types: Aerial and close-up images and videos (multimodal input)
- Train/test split: 80% training / 20% testing
- Model image branch: 9 layers, 6 distinct layer types; video branch: 6 total layers, all distinct layer types
- Dynamic hyperparameter selection during training, adapting hyperparameters based on epoch accuracy
- System integration: Neural network embedded into a UAV for autonomous large-scale disease detection

- Testing phase simulated real-world UAV deployment conditions

Ceres: A Novel Device Utilizing Raspberry Pi & Neural Networks to Detect Crop Diseases Using Imaging

- Dataset of ~13,000 expert-validated images across 14 crops and 24 diseases
- Model architecture: 12-layer neural network composed of 6 distinct layer types
- Median filtering and feature extraction applied to emphasize key image features
- Training setup: 70% training / 30% prediction split using previously unseen images for testing
- Final model performance: 89% accuracy and 92.4 F-score
- Physical system: Raspberry Pi–based device with camera, LCD, button, and 3D-printed enclosure
- Inference speed: 2–3 seconds per image on the device
- Designed and built both the handheld device and the neural network entirely independently
- Conducted all research and development without guidance from an external mentor or laboratory
- Users capture an image of a crop with a single button press, image is sent to Raspberry Pi housing the neural network, device processes the image and displays a disease diagnosis on the LCD screen within seconds

AWARDS

- Regeneron Science Talent Search Top 40 Finalist 2025
- National Honor Society Scholarship National Semifinalist 2025
- Regeneron International Science and Engineering Fair (ISEF) Finalist 2022 & 2024
- US Congressional Gold Medal Award 2024
- Live Más Scholarship Recipient 2024
- NCWIT Aspirations in Computing High School Award Ohio Winner 2025
- Fourth Place at the National Junior Science & Humanities Symposium 2022
- The Earth Prize Scholar 2024
- Bronze & Silver Medalist at the GENIUS Olympiad 2022 & 2023
- Presidential Service Gold Medal Award 2022
- National STEM Challenge Champion 2024
- Riley’s Way Call for Kindness Grant Winner 2023 & 2024
- American Junior Academy of Science Presenter 2022 & 2025
- Winner of the Believe in Ohio Competition 2022
- Conrad Challenge Power Pitch Awardee & Pete Conrad Scholar Awardee 2022