
CONTACT INFORMATION	2250 Shealy Dr. University of Florida Gainesville, FL 32611 USA	<i>E-mail:</i> decastro.a@ufl.edu <i>Phone:</i> (352) 663-2199 <i>WWW:</i> Academic website
RESEARCH INTERESTS	My research interest focuses on data-driven precision livestock farming using artificial intelligence (AI) algorithms to advance dairy cattle management, health, and welfare. I develop deep learning models that integrate sensor, image, and on-farm phenotypic data for disease and fertility prediction. I design AI-based computer vision systems for automated animal tracking and activity monitoring in dairy cattle to support behavior and pen management. I also build cloud-based web applications for heat stress management and real-time data-driven decision support in commercial dairy operations.	
EDUCATION	University of Florida , Gainesville, Florida USA Ph.D. Student, Animal Sciences, August 2024 - present • Advisor: Dr. Haipeng Yu University of St. La Salle , Bacolod City, PHILIPPINES B.Sc., Electronics Engineering, May 2022 • Thesis: “Developing an Automated and Cost-Effective Animal Observation and Tracking System with the use of IoT and Machine Learning” • Advisor: Engr. Myles Joshua T. Tan	
WORK EXPERIENCE	Department of Animal Sciences University of Florida , Gainesville, Florida USA • Graduate Research Assistant College of Engineering and Technology University of St. La Salle , Bacolod City, PHILIPPINES • Senior Engineering Research Assistant Wildlife Reserves Talarak Foundation Inc. , Bacolod City, PHILIPPINES • Communications Engineering Intern	08/2024 - present 11/2019 - 05/2022 06/2021 - 08/2021
PROFESSIONAL SOCIETY MEMBERSHIPS	• American Dairy Science Association. 2026 - Present • American Society of Animal Science. 2025 - Present • Institute of Electronics Engineers of the Philippines. 2019 - Present	

PREPRINTS

4. Tang, Z., Wang, J., **De Castro, A.**, Zhang, Y., Bastos Primo, V., Montevecchio Bernardino, A.B., Gota Morota, Wang, X., Chebel, R.C., Yu, H. (2026). Can 3D point cloud data improve automated body condition score prediction in dairy cattle?. *arXiv*. doi: [arXiv:2601.22522](https://arxiv.org/abs/2601.22522)
3. Wang, J., **De Castro, A.**, Zhang, Y., Basolli Borsatto, L., Guo, Y., Bastos Primo, V., Montevecchio Bernardino, A.B., Gota Morota, Chebel, R.C., Yu, H. (2026). Evaluating transfer learning strategies for improving dairy cattle body weight prediction in small farms using depth-image and point-cloud data. *arXiv*. doi: [arXiv:2601.01044](https://arxiv.org/abs/2601.01044)

PEER REVIEWED

JOURNAL ARTICLES

- 2025
 2. **De Castro, A.**, Wang J., Bonney-King J.G., Morota G., Miller-Cushon E.K., and Yu H. (2025). AnimalMotionViz: an interactive software tool for tracking and visualizing animal motion patterns using computer vision. *JDS Communications*. doi: [10.3168/jdsc.2024-0706](https://doi.org/10.3168/jdsc.2024-0706)
- 2022
 1. AlDahoul, N., Karim, H.A., **De Castro, A.**, and Tan, M.J.T. (2022). Localization and classification of space objects using EfficientDet detector for space situational awareness. *Scientific reports*, 12(1), 21896. doi: [10.1038/s41598-022-25859-y](https://doi.org/10.1038/s41598-022-25859-y)

PEER REVIEWED

CONFERENCE

PROCEEDINGS

- 2025
 2. **De Castro, A.**, Wang, J., Bonney-King, J.G., Morota, G., Miller-Cushon, E.K., and Yu, H. (2025). AnimalMotionViz: an interactive software tool for tracking and visualizing animal motion patterns using computer vision. In: *Proceedings, The 3rd US Conference on Precision Livestock Farming..* June 2–5, Lincoln, NE. doi: [10.1016/j.anscip.2025.08.168](https://doi.org/10.1016/j.anscip.2025.08.168)
- 2022
 1. Castañeda, J.A.J., **De Castro, A.**, Sy, M.A.G., AlDahoul, N., Tan, M.J.T., and Karim, H.A. (2022). Development of a Detection System for Endangered Mammals in Negros Island, Philippines Using YOLOv5n. In *International Conference on Computational Science and Technology* (pp. 435-447). Singapore: Springer Nature Singapore. doi: [10.1007/978-981-19-8406-8_35](https://doi.org/10.1007/978-981-19-8406-8_35)

CONTRIBUTED

CONFERENCE

PRESENTATIONS

(* denotes presenting author)

- 2026
 9. **De Castro, A.***, Burke K., Miller-Cushon E.K., and Yu H. Computer vision-based interaction detection for social network analysis in group-housed dairy calves. 2026 American Dairy Science Association Annual Meeting. Milwaukee, Wisconsin. June 23.
 8. **De Castro, A.***, Chebel R.C., and Yu H. Utility of multi-modal integration for predicting post-partum diseases in dairy cattle with imbalanced data. 2026 American Dairy Science Association Annual Meeting. Milwaukee, Wisconsin. June 22.
 7. **De Castro, A.***, Chebel R.C., and Yu H. Utility of multi-modal integration for predicting post-partum diseases in dairy cattle with imbalanced data. UF/IFAS Artificial Intelligence Summit. Gainesville, Florida. February 12.

- 2025
6. **De Castro, A.***, Chebel R.C., and Yu H. Utility of multi-modal integration for predicting postpartum diseases in dairy cattle with imbalanced data. 2025 Proceedings of the 11th UF/IFAS Animal Sciences Symposium. Gainesville, Florida. October 8.
 5. Wang, J.*, **De Castro, A.**, Zhang, Y., Basolli Borsatto, L., Guo, Y., Bastos Primo, V., Montevecchio Bernardino, A.B., Gota Morota, Chebel, R.C., Yu, H. Transfer learning for improving dairy cattle body weight prediction in small farms using depth images and point cloud data. 2025 Proceedings of the 11th UF/IFAS Animal Sciences Symposium. Gainesville, Florida. October 8.
 4. **De Castro, A.***, Wang, J.*, Zhang, Y.*. AI enabled edge computing system for real time high throughput phenotyping in dairy cattle. 2025 Proceedings of the 11th UF/IFAS Animal Sciences Symposium Gator Tank. Gainesville, Florida. October 8.
 3. **De Castro, A.***, Wang J., Bonney-King J.G., Morota G., Miller-Cushon E.K., and Yu H. AnimalMotionViz: An interactive software tool for tracking and visualizing animal motion patterns using computer vision. 2025 US Precision Livestock Farming Conference. Omaha, Nebraska. June 2-5.
- 2024
2. **De Castro, A.***, Wang J., Bonney-King J.G., Morota G., Miller-Cushon E.K., and Yu H. AnimalMotionViz: An interactive software tool for tracking and visualizing animal motion patterns using computer vision. 2024 Proceedings of the 10th UF/IFAS Animal Sciences Symposium. St. Augustine, Florida. October 31 - November 1.
- 2022
1. Castañeda, J.A.J., **De Castro, A.**, Sy, M.A.G.*, AlDahoul, N., Tan, M.J.T., and Karim, H.A. Development of a detection system for endangered mammals in Negros Island, Philippines using YOLOv5n. International Conference on Computational Science and Technology 2022. Online. August 22-23.
- INVITED
PRESENTATIONS
- 2026
1. AI-assisted precision monitoring of dairy cattle health and behavior. UF/IFAS AI Salon. University of Florida. March 27.
- PARTICIPATION IN
MEETINGS,
SYMPOSIUMS, AND
WORKSHOPS
- 2026
- NVIDIA/UF DLI. Building Transformer-Based Natural Language Processing Applications. Gainesville, Florida. March 31. <https://learn.nvidia.com/certificates?id=jn1N8Ds3TtyHxSQLSFrISw#>
- 2025
- NVIDIA/UF DLI. Data parallelism: How to train deep learning models on multiple GPUs. Gainesville, Florida. October 30-31.
 - 2025 American Society of Animal Sciences Spring writing workshop. Fort Collins, Colorado. May 19-21.

TEACHING
EXPERIENCE

University of Florida, Gainesville, Florida, USA
Graduate Teaching Assistant

- ANS 6932: R Programming in Animal Data Science **Spring 2025**

University of St. La Salle, Bacolod City, PHILIPPINES
Undergraduate Teaching Assistant

- Biomedical Devices and Instrumentation **Spring 2022**
- Science, Technology, Society **Spring 2022**
- Science, Technology, Society **Fall 2021**
- Calculus 2: Differential Equations **Fall 2019**

SHORT COURSES

1st Annual CAS-CET Discipline-Specific Lecture and Workshop Series on Computational Life and Health Sciences, Bacolod City, PHILIPPINES

Lead Instructor

- Basics of Computer Programming in Python and Geographical Plotting Workshop **July 2022**

Special Lecture Presentation, Bacolod City, PHILIPPINES

Presenter

- Applications of Image Compression using Singular Value Decomposition **October 2019**

SOFTWARE
DEVELOPMENTS

Computer vision software

- AnimalMotionViz - <https://github.com/uf-aiaos/AnimalMotionViz>

MEDIA COVERAGE

- 2026
- Featured in "UF Uses AI and Smart Collars to Cut Antibiotic Use," University of Florida AI² Center. June 2026. [\[LinkedIn\]](#)

SCHOLARSHIPS/
AWARDS

- 2026
- First Place, Production Division (PhD), ADSA Purina Animal Nutrition Poster Competition. 2026 American Dairy Science Association Annual Meeting, Milwaukee, Wisconsin. June.
- 2025
- University of Florida Spring 2025 ANS Graduate Student Top-up Award, University of Florida, Gainesville, Florida. July.
- 2024
- IFAS ANS Partial Dairy Science Assistantship, University of Florida, Gainesville, Florida. August 2024 - May 2026.
- 2022
- Awarded "Best Student Paper" for the conference paper published in ICCST. Online. August.

LICENSES	• Professional Regulatory Commission - Electronics Engineer. 2022 - Present
ADDITIONAL TRAINING AND SKILLS	
SOFTWARE	• Python, R. • MATLAB, C++. • Microsoft Office. • Machine learning and deep learning: TensorFlow, Keras, scikit-learn, PyTorch, YOLO. • Computer vision and web apps: OpenCV, Dash, Django. • Web: HTML5, CSS3. • AutoCAD, LaTeX (Overleaf). • Databases and deployment: PostgreSQL, Podman, Cron, rclone, Celery. • Operating Systems: MacOS, Windows, Linux.
HARDWARE	• Edge and embedded AI: NVIDIA Jetson, Raspberry Pi, Arduino. • IoT and hardware prototyping: ESP8266, MQTT, Node.js, NI Multisim, Proteus, Quartus, GNS3. • Hardware lab: welding, soldering, breadboarding.
LANGUAGES	• Hiligaynon (L1) • English (L2, IELTS 7.0) • Tagalog (L2)