Curriculum Vitae

Mahmoud Eldefrawy

PH.D,

MIDWESTERN STATE UNIVERSITY, TEXAS, UNITED STATES.

PROFILE

My research incorporates AI (computer vision), XAI, robotics, unoccupied aerial systems (UAS), geospatial, photogrammetry, structure from motion. A principal theme of my research is computer vision and robotics in agriculture.

In the last few years, I have been focused on developing solutions to extract important information during the growth season of cotton crops such as the stand count framework. The framework addresses the data limitation and trains a vision model that has a high potential for generalization.

CONTACT INFORMATION

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EDUCATION

Aug 2019 – May 2025	Ph.D. Extending the Utility of Photogrammetry (Structure from Motion) with AI, Texas A&M University-Corpus Christi, Texas, US.
Feb 2012 – Sep 2015	M.S. New Efficient Techniques for Arabic Stemmers, Arab Academy for Science Technology and Maritime Transport Alexandria, Egypt.
Feb 2011 – Feb 2012	Postgraduate Diploma in Computer Science, Arab Academy for Science Technology and Maritime Transport, Alexandria, Egypt.
Sep 2002 – Jul 2007	B.S. Computer Science, Faculty of Science, Banha University, Banha, Egypt.

WORK EXPERIENCE

Aug 2019 – May 2026	Graduate Research Assistant at Texas A&M University-Corpus Christi, Texas, U.S. Texas A&M AgriLife Research and Extension Center, Texas, U.S.
Nov 2016 – July 2017	Laboratory Instructor at the American University of the Middle East (AUM), Ahmadi, Kuwait.
Sept 2012 – July 2016	Teaching Assistant at Arab Academy for Science and Technology and Maritime Transport, Alexandria, Egypt.
May 2012 – Sept 2012	Android Software Development Internship, Cairo, Egypt.

TEACHING EXPERIENCE

- CS111 – Introduction to Computers.
- CS212 – Data Structures and Algorithms.
- CS202 – Discrete Structures.
- CS143 – Introduction to Problem Solving and Programming.
- CS159 – Programming Application for Engineering.
- CE264 – Advanced C Programming.

AWARDS

- Tuition Awards for 2022, 2023, 2024 years from AgriLife Corpus Christi, Texas, U.S.
- Third place, faculty of engineering, poster, 2022, Texas A&M University-Corpus Christ, Texas, U.S.
- Tuition Scholarship, Spring, 2022, from Geospatial Science and Computing Science (GSCS) program, Texas A&M University-Corpus Christi, Texas, U.S.
- Summer, 2020, Assistantship for Texas A&M University-Corpus Christ Joint COVID19 Costal Bend Modelling Task Force.

PUBLICATIONS

PEER REVIEWED JOURNALS

- **Eldefrawy, M.**, King, S. A., & Starek, M. (2022). Partial scene reconstruction for close range photogrammetry using deep learning pipeline for region masking. Remote Sensing, 14(13), 3199.
- **El-Defrawy, M.**, El-Sonbaty, Y., & Belal, N. A. (2016). A rule-based subject-correlated Arabic stemmer. Arabian Journal for Science and Engineering, 41, 2883-2891.
- **El-Defrawy, M.**, El-Sonbaty, Y., & Belal, N. A. (2015). Cbas: Context based arabic stemmer. arXiv preprint arXiv:1611.00027.

PEER REVIEWED CONFERENCES

- **El-Defrawy**, M., El-Sonbaty, Y., & Belal, N. A. (2015). Enhancing root extractors using light stemmers. In Proceedings of the 29th Pacific Asia Conference on Language, Information and Computation (pp. 157-166). Waseda University.
- **El-Defrawy**, M., Belal, N. A., & El-Sonbaty, Y. (2017, September). An efficient rank based Arabic root extractor. In 2017 Intelligent Systems Conference (IntelliSys) (pp. 870-878). IEEE.
- Ybarra, M., **Eldefrawy, M.**, & King, S. A. (2023, October). UGVs in Agriculture: Steering control system to navigate through fields via waypoints. In Proceedings of the Twenty-fourth International Symposium on Theory, Algorithmic Foundations, and Protocol Design for Mobile Networks and Mobile Computing (pp. 551-555).

ORAL AND POSTER PRESENTATIONS

- **Eldefrawy, M**., Bhandari, M., King, S. A., Landivar, J. L., Gaona, F., & Landivar, J. (2023, October). Cotton Stand Counting Using UAV Data and Deep Learning. In ASA, CSSA, SSSA International Annual Meeting. ASA-CSSA-SSSA.
- **Eldefrawy, M**., King, S. A., Baker, S., Bhandari, M., Chang, A., Dube, N., Rudd, J. C., & Landivar, J. (2020) Wheat Yield Prediction Using Artificial Neural Networks and UAVs Data [Abstract]. ASA, CSSA and SSSA International Annual Meetings (2020) | VIRTUAL, Phoenix, AZ.

EDITORSHIP

- Guest Editor: Special Issue on "Artificial Intelligence for Trustworthy Industrial Internet of Things," Big Data and Cognitive Computing Journal, December 2021.