Dr. SATHISHKUMAR (SATHISH) SAMIAPPAN

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EDUCATION

Ph.D, Electrical and Computer Engineering with minor in Computer Science
Mississippi State University(MSU), Starkville, MS — August 2014

Master of Science, Computer Science and Engineering
Amrita University, India — May 2006

Bachelor of Engineering, Electronics and Communication Engineering
Bharathiar University, India — May 2003

PROFESSIONAL EXPERIENCE

The University of Tennessee at Knoxville
Associate Professor, Department of Biosystems Engineering — November 2024 - Present

Mississippi State University
Associate Research Professor, Geosystems Research Institute — July 2023 – October 2024
Assistant Research Professor, Geosystems Research Institute — May 2018 – June 2023
Postdoctoral Associate, Geosystems Research Institute — October 2014 – April 2018

National Oceanic and Atmospheric Administration — May–August 2013
Intern, National Data Buoy Center, Stennis Space Center, MS

Amrita University — June 2006 – July 2009
Lecturer, Department of Electronics and Communication Engineering

CONTRACTS AND GRANTS

1. PI- J. Drewry, Co-PI- **S. Samiappan**, and J. M. P. Czarnecki (2024-27). *Harnessing AI To Improve Yield Monitor Data Veracity To Increase Adoption Of Precision Agricultural Management*. Submitted to the United States Department of Agriculture (USDA) - National Institute of Food and Agriculture, Amount: **$** 649,913.00
2. PI- **S. Samiappan** (2023). *Detection and Classification of Micro-plastics in Poultry*

using Hyperspectral Imaging. Funded by the United States Department of Agriculture (USDA) Agricultural Research Service (ARS) , Amount: **$** 7,361.00

3. PI- **S. Samiappan** and Co-PI- J. M. P. Czarnecki (2023 - 2028). *Advanced autonomy, precision agriculture and artificial intelligence for dynamic, robust and resilient cropping systems*. Funded by the USDA ARS, Amount: **$** 4,159,455.00
4. PI- **S. Samiappan** and Co-PI- G.Turnage (2023 - 2024). *Hyperspectral detection of off-flavor causing cyanobacteria in catfish aquaculture with unmanned aerial systems*. USDA-ARS sponsored project of the MS Center for Enhancing Utilization and Safety of Catfish and Other Aquatic Foods, Amount: **$** 51,756.00
5. PI- K. O. Evans, Co-PI- M. McConnell, and **S. Samiappan** (2022 - 2024). *CRP Menu -a Spatially-Explicit Decision Support Tool to Enhance Landowner Engagement in CRP Incentives Programs*. Funded by the USDA (2023-2025), Amount: **$** 1,500,264.00
6. PI- G. Turnage, Co-PI- **S. Samiappan**, and R. J. Moorhead (2022 - 2026). *Automated Mapping of Non-Indigenous Aquatic Plant Species (In Response to ERDC BAA Topic # EL-33)*. Funded by The U.S. Army Engineer Research and Development Center (Expected start date - Jan 2023), Amount: **$** 2,533,927.00
7. PI-**S. Samiappan** (August 2022 - August 2023). *Using Hyperspectral Sensors and Machine Learning to Detect Threats to Natural Ecosystems*. Island Conservation - California & Hawaii, Amount: **$** 24,366.00
8. PI- **S. Samiappan** (2021 - 2022). *Automated classification of aquatic invasive plants using deep learning AI and visible spectrum imagery*. Office of Research and Economic Development (ORED) Undergraduate Research Program, Funded by the Mississippi State University's ORED, Amount: **$** 2,000.00
9. PI- K. O. Evans, Co-PI- A. Linhoss (2017-2021), and **S. Samiappan (2021-2022)** (2017 - 2022). *Strategic Conservation Assessment of Gulf Coast Landscapes*. Funded by United States Department of Interior, Amount: **$** 1,766,618.00
10. PI- C. Barickman and Co-PI- **S. Samiappan** (2022). *Utilization of Small Unmanned Aerial Systems and Hyperspectral Imagery for High-Throughput Phenotyping of Cowpea Tolerance to Waterlogging Stress*. Funded by USDA under Hatch-Multistate CRIS Project, Amount: **$** 49,886.46
11. PI- K. O. Evans and Co-PI- **S. Samiappan** (January 2022 - December 2022). *Maintenance, Update, and Streamlining of the Strategic Conservation Assessment Tools*. Funded by United States Department of Interior, Amount: **$** 150,000
12. Co-PIs- **S. Samiappan PI- K. O. Evans** and M. T. Gray. (January 2021 - December 2023). *Next Generation Southeastern Conservation Blueprint for the Middle-Southeast and Lower Mississippi Valley*. Funded by United States Department of Interior, Amount: **$** 407,942
13. PI- **S. Samiappan** and Co-PI- R. B. Iglay. (July 2021 - June 2023). *Using Multiple Object Tracking (MOT) to Identify Escape Reactions of Two Gull Species From sUAS*

Videos: Video Tracking Tool Development for Principal Study. Funded by USDA National Wildlife Research Center (NWRC) and Federal Aviation Administration (FAA) – 2021 to 2022, Grant Number: AP21WSNWRC00C048, Amount: **$**124,825

14. PI- R. B. Iglay and Co-PI- **S. Samiappan** (August 2020 - July 2023). *Companion Study to UAS Monitoring Study, Mammal and Nocturnal Surveys Using sUAS: Role in Airport Environments.* Funded by USDA NWRC and FAA – 2020 to 2022, Grant Number: AP20WSNWRC00C026, Amount: **$**824,753.00
15. PI- R. B. Iglay and Co-PI- **S. Samiappan** (June 2020 - May 2022). *Developing UAS Operator Guide and Evaluating Estimate Bias for Airport Wildlife Monitoring.* Funded by USDA NWRC and FAA – 2020 to 2022, Grant Number:AP2WSNWRC00C010, Amount: **$**116,721.08
16. PI- R. J. Moorhead, Co-PIs- J. M. P. Czarnecki, **S. Samiappan**, and M. Kurum (October 2019 - September 2023). *Advancement of UAS/UAV Application Systems.* Funded by USDA ARS – 2019 to 2022, Grant Number:58-6064-9-007, Amount: **$**2,589,277.00

SCHOLARLY ACCOMPLISHMENTS

Google Scholar

Journal Articles and Book Chapters

1. Jagadeeswaran Ramasamy, Anand Raju, Kavitha Krishnasamy Ranganathan, Muthumanickam Dhanaraju, Backiyathu Saliha, Kumaraperumal Ramalingam, and **S. Samiappan** (2025). "Battle Royale Optimization for Optimal Band Selection in Predicting Soil Nutrients Using Visible and Near-Infrared Reflectance Spectroscopy and PLSR Algorithm". In: *Journal of Imaging* 11.3. URL: https://www.mdpi.com/2313-433X/11/3/83
2. John P. Brooks, Martin J. Wubben, Renotta K. Smith, Josh Waldbieser, **S. Samiappan**, Purushothaman Ramamoorthy, and Raju Bheemanahalli (2025). "Predicting select soil health genes using hyperspectral reflectance in nematode-infected and drought stressed greenhouse cotton". In: *Frontiers in Soil Science* Volume 5 - 2025. URL: https://www.frontiersin.org/journals/soil-science/articles/10.3389/fsoil.2025.1499491
3. Xia Pan, Zhenyi Wang, Gary Feng, Shan Wang, and **S. Samiappan** (Apr. 2025). "Automated mapping of land cover in Google Earth Engine platform using multispectral Sentinel-2 and MODIS image products". In: *PLOS ONE* 20.4, pp. 1–20. URL: https://doi.org/10.1371/journal.pone.0312585
4. Anand Raju and **S. Samiappan** (2025). "Feature Extraction in 5G Wireless Systems: A Quantum Cat Swarm and Wavelet-Based Approach". In: *Future Internet* 17.5. URL: https://www.mdpi.com/1999-5903/17/5/188

5. Lucas B. Ferreira, Vitor S. Martins, Uilson R. V. Aires, Nuwan Wijewardane, Xin Zhang, and **S. Samiappan** (2025). "FieldSeg: A scalable agricultural field extraction framework based on the Segment Anything Model and 10-m Sentinel-2 imagery". In: *Computers and Electronics in Agriculture* 232, p. 110086. URL: 10.1016/j.compag.2025.110086
6. Joby M. Prince Czarnecki, **S. Samiappan**, Raju Bheemanahalli, Yanbo Huang, and Sadia Alam Shammi (2025). "A brief history of remote sensing of soybean". en. In: *Agronomy Journal* 117.1, e70004. URL: https://doi.org/10.1002/agj2.70004
7. Suraj A. Yadav, Xin Zhang, Nuwan K. Wijewardane, Max Feldman, Ruijun Qin, Yanbo Huang, **S. Samiappan**, Wyatt Young, and Francisco G. Tapia (2025). "Context-Aware Deep Learning Model for Yield Prediction in Potato Using Time-Series UAS Multispectral Data". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, pp. 1–20. URL: https://doi.org/10.1109/JSTARS.2025.3539217
8. J. Aravinth, R. Anand, and **S. Samiappan** (2024). "Multilinear compressive learning and reconstruction of hyperspectral data with U-Net architecture for enhanced spectral imaging". In: *Digital Signal Processing* 155, p. 104740. URL: https://doi.org/10.1016/j.dsp.2024.104740
9. Raymond B. Iglay, Landon R. Jones, Jared A. Elmore, Kristine O. Evans, **S. Samiappan**, Morgan B. Pfeiffer, and Bradley F. Blackwell (2024). "Wildlife monitoring with drones: A survey of end users". In: *Wildlife Society Bulletin*, e1533. URL: https://doi.org/10.1002/wsb.1533
10. **S. Samiappan**, B.S Krishnan, D Dehart, L.R Jones, J.A Elmore, Kristine O Evans, and R.B Iglay (July 2024). "Aerial Wildlife Image Repository for animal monitoring with drones in the age of artificial intelligence". In: *Database* 2024, baae070. URL: https://doi.org/10.1093/database/baae070
11. R Anand, **S. Samiappan**, and M. Prabukumar (June 2024). "Fine-tuning digital FIR filters with gray wolf optimization for peak performance". In: *Scientific Reports* 14.1, p. 12675. URL: https://doi.org/10.1038/s41598-024-62403-6
12. P. Sreevidya, J. Aravinth, and **S. Samiappan** (2024). "Intermediate Layer Attention Mechanism for Multimodal Fusion in Personality and Affect Computing". In: *IEEE Access* 12, pp. 112776–112793. URL: https://doi.org/10.1109/ACCESS.2024.3442377
13. J Aravinth, R Anand, and **S. Samiappan** (2024). "Multilinear compressive learning and reconstruction of hyperspectral data with U-Net architecture for enhanced spectral imaging". In: *Digital Signal Processing*, p. 104740. URL: https://doi.org/10.1016/j.dsp.2024.104740
14. R Anand, **S. Samiappan**, and K.R Kavitha (2024). "Flower pollination optimization based hyperspectral band selection using modified wavelet Gabor deep filter neural network". In: *Infrared Physics and Technology* 138. URL: https://www.sciencedirect.com/science/article/pii/S1350449524000999

15. J Crumpton, P Morgan, **S. Samiappan**, J.A Elmore, L Jones, B Krishnan, R.B Iglay, E Fernandez-Juricic, and B Blackwell (2024). "Relief Displacement of Airborne Objects". In: *Remote Sensing Letters* 15.9. URL: https://doi.org/10.1080/2150704X.2024.2387131

16. R.R Vennam, S Poudel, P Ramamoorthy, **S. Samiappan**, K.R Reddy, and R Bheemanahalli (2023). "Impact of Soil Moisture Stress during the Silk Emergence and Grain-filling in Maize". In: *Physiologia Plantarum* 175.5. URL: https://doi.org/10.1111/ppl.14029

17. A Shrestha, R Bheemanahalli, A Adeli, **S. Samiappan**, J.M.P Czarnecki, D McCraine, K.R Reddy, and R.J Moorhead (2023). "Phenological Stage and Vegetation Index for Predicting Corn Yield under Rainfed Environments". In: *Frontiers in Plant Science* 14.1168732. URL: https://doi.org/10.3389/fpls.2023.1168732

18. D McCraine, **S. Samiappan**, L Kohler, T Sullivan, and D. J. Will (2024). "Automated Hyperspectral Feature Selection and Classification of Wildlife Using Uncrewed Aerial Vehicles". In: *Remote Sensing* 16.2. URL: https://www.mdpi.com/2072-4292/16/2/406

19. A. Matese, J.M.P Czarnecki, and **S. Samiappan** (2023). "Are unmanned aerial vehicle- based hyperspectral imaging and machine learning advancing crop science". In: *Trends in Plant Science*. URL: https://doi.org/10.1016/j.tplants.2023.09.001

20. L.R. Jones, J.A. Elmore, B.S. Krishnan, **S. Samiappan**, and R.B. Iglay (2023). "Controllable factors affecting accuracy and precision of human identification of animals from drone imagery". In: *Ecosphere* 14. URL: https://doi.org/10.1002/ecs2.4657

21. B.S. Krishnan, J.A. Elmore, L.R. Jones, **S. Samiappan**, and R.B. Iglay (2023). "-Fusion of visible and thermal images improves automated detection and classification of animals for drone surveys". In: *Scientific Reports - Nature* 13.1. URL: https://doi.org/10.1038/s41598-023-37295-7

22. R. Bheemanahalli, B. Santhana Krishnan, N. Wijewardane, **S. Samiappan**, and K. R. Reddy (Apr. 2023). "Remote Sensing Algorithms and Their Applications in Plant Phenotyping". In: *Springer - Translating Physiological Tools to Augment Crop Breeding*. URL: https://doi.org/10.1007/978-981-19-7498-4_15

23. J.A. Elmore, E.A. Schultz, L.R. Jones, K.O. Evans, **S. Samiappan**, M.B. Pfeiffer, B.F. Blackwell, and R.B. Iglay (Feb. 2023). "Evidence on the efficacy of small unoccupied aircraft systems (UAS) as a survey tool for North American terrestrial, vertebrate animals: a systematic map". In: *Environmental Evidence* 12.1, p. 3. URL: https://doi.org/10.1186/s13750-022-00294-8

24. A. Baskar, T.G. Kumar, and **S. Samiappan** (Feb. 2023). "A vision system to assist visually challenged people for face recognition using multi-task cascaded convolutional neural network (MTCNN) and local binary pattern (LBP)". in: *Journal of Ambient Intelligence and Humanized Computing*. URL: https://doi.org/10.1007/s12652-023-04542-8

25. P. Ramamoorthy, **S. Samiappan**, M. J. Wubben, J. P. Brooks, R. Bheemanahalli, and K. R. Reddy (2022). "Hyperspectral Reflectance and Machine Learning

Approaches for the Detection of Drought and Root-Knot Nematode Infestation in Cotton". In: *Remote Sensing* 14.16, p. 105493. URL: https://www.mdpi.com/2072-4292/14/16/4021

26. **S. Samiappan**, A. Shamaskin, J. Liu, Y. Liang, J. Roberts, A. L. Sesser, S. M. Westlake, A. Linhoss, K. O. Evans, J. Tirpak, T. E. Hopkins, S. Ashby, and L. W. Burger (2022). "Evidence-Based Land Conservation Framework Using Multi-Criteria Acceptability Analysis: A Geospatial Tool for Strategic Land Conservation in the Gulf Coast of the United States". In: *Environmental Modelling & Software*, p. 105493. URL: https://www.sciencedirect.com/science/article/pii/S1364815222001967
27. R. Bheemanahalli, P. Ramamoorthy, S. Poudel, **S. Samiappan**, N. Wijewardane, and K. R. Reddy (2022). "Effects of Drought and Heat Stresses During Reproductive Stage on Pollen Germination, Yield, and Leaf Reflectance Properties in Maize (Zea Mays L.)". In: *Plant Direct* 6.8, e434. URL: https://onlinelibrary.wiley.com/doi/abs/10.1002/pld3.434
28. R. Anand, **S. Samiappan**, V. Shanmugham, E. Worch, and M. Zhou (2022). "Airborne Hyperspectral Imagery for Band Selection Using Moth Flame Metaheuristic Optimization". In: *Journal of Imaging* 8.5. URL: https://www.mdpi.com/2313-433X/8/5/126
29. A. L. Sesser, S. M. Westlake, C. Schafer, J. Roberts, **S. Samiappan**, Y. Allen, and A. Linhoss (2022). "Co-Producing Decision Support Tools for Strategic Conservation of Gulf Coast Landscapes". In: *Current Research in Environmental Sustainability* 4, p. 100156. URL: https://www.sciencedirect.com/science/article/pii/S2666049022000342
30. J. M. P. Czarnecki, **S. Samiappan**, M. Zhou, C. D. McCraine, and L. L. Wasson (2021). "Real-Time Automated Classification of Sky Conditions Using Deep Learning and Edge Computing". In: *Remote Sensing* 13.19. URL: https://www.mdpi.com/2072-4292/13/19/3859
31. M. Zhou, J. A. Elmore, **S. Samiappan**, K. O. Evans, M. B. Pfeiffer, B. F. Blackwell, and R. B. Iglay (2021). "Improving Animal Monitoring Using Small Unmanned Aircraft Systems (sUAS) and Deep Learning Networks". In: *Sensors* 21.17. URL: https://www.mdpi.com/1424-8220/21/17/5697
32. J. A. Elmore, M. F. Curran, K. O. Evans, **S. Samiappan**, M. Zhou, M. B. Pfeiffer, B. F. Blackwell, and R. B. Iglay (June 2021). "Evidence on the Effectiveness of Small Unmanned Aircraft Systems (sUAS) as a Survey Tool for North American Terrestrial, Vertebrate Animals: A Systematic Map Protocol". In: *Environmental Evidence* 10.1, p. 15. URL: https://doi.org/10.1186/s13750-021-00228-w
33. S. Sawant, P. Manoharan, and **S. Samiappan** (2020). "A modified Cuckoo Search algorithm based optimal band subset selection approach for hyperspectral image classification". In: *Journal of Spectral Imaging* 9.1, a6. URL: https://doi.org/10.1255/jsi.2020.a6

34. A. Shamaskin, **S. Samiappan**, J. Liu, J. Roberts, A. Linhoss, and K. O. Evans (2020). "Multi-Attribute Ecological and Socioeconomic Geodatabase for the Gulf of Mexico Coastal Region of the United States". In: *Data* 5.1. URL: https://www.mdpi.com/2306-5729/5/1/3

35. **S. Samiappan**, L. A. Hathcock, G. Turnage, C. McCraine, J. Pitchford, and R. J. Moorhead (2019). "Remote Sensing of Wildfire Using a Small Unmanned Aerial System: Post-Fire Mapping, Vegetation Recovery and Damage Analysis in Grand Bay, Mississippi/Alabama, USA". in: *Drones* 3.2. URL: https://www.mdpi.com/2504-446X/3/2/43

36. P. C. Burr, **S. Samiappan**, L. A. Hathcock, R. J. Moorhead, and B. S. Dorr (2019). "Estimating Waterbird Abundance on Catfish Aquaculture Ponds Using an Unmanned Aerial System". In: *Human–Wildlife Interactions* 13.16 (2). URL: https://digitalcommons.usu.edu/hwi/vol13/iss2/16/

37. **S. Samiappan**, A. Shamaskin, J. Liu, J. Roberts, A. Linhoss, and K. O. Evans (2019). "Land Conservation in the Gulf of Mexico Region: A Comprehensive Review of Plans, Priorities, and Efforts". In: *Land* 8.5. URL: https://www.mdpi.com/2073-445X/8/5/84

38. P. Manoharan, S. Sawant, **S. Samiappan**, and L. Agilandeeswari (Oct. 23, 2018). "Three-Dimensional Discrete Cosine Transform-Based Feature Extraction for Hyperspectral Image Classification". In: *Journal of Applied Remote Sensing* 12.4, pp. 1–. URL: https://lens.org/017-263-908-627-877

39. **S. Samiappan**, J. M. P. Czarnecki, H. Foster, B. K. Strickland, J. L. Tegt, and R. J. Moorhead. (2018). "Quantifying Damage From Wild Pigs With Small Unmanned Aerial Systems". In: *Wildlife Society Bulletin* 42.2, pp. 304–309. URL: https://wildlife.onlinelibrary.wiley.com/doi/abs/10.1002/wsb.868

40. **S. Samiappan**, G. Turnage, C. McCraine, J. Skidmore, L. A. Hathcock, and R. J. Moorhead (2017). "Post-Logging Estimation of Loblolly Pine (Pinus Taeda) Stump Size, Area and Population Using Imagery From a Small Unmanned Aerial System". In: *Drones* 1.1. URL: https://www.mdpi.com/2504-446X/1/1/4

41. J. M. P. Czarnecki, **S. Samiappan**, L. Wasson, J. D. McCurdy, D. B. Reynolds, W. P. Williams, and R. J. Moorhead (2017). "Applications of Unmanned Aerial Vehicles in Weed Science". In: *Advances in Animal Biosciences* 8.2, pp. 807–811

42. **S. Samiappan**, G. Turnage, L. A. Hathcock, and R. J. Moorhead (2017). "Mapping of Invasive Phragmites (Common Reed) in Gulf of Mexico Coastal Wetlands Using Multispectral Imagery and Small Unmanned Aerial Systems". In: *International Journal of Remote Sensing* 38.8-10, pp. 2861–2882. URL: https://doi.org/10.1080/01431161.2016.1271480

43. **S. Samiappan**, G. Turnage, L. A. Hathcock, L. Casagrande, P. Stinson, and R. J. Moorhead (2017). "Using Unmanned Aerial Vehicles for High-Resolution Remote Sensing to Map Invasive Phragmites Australis in Coastal Wetlands". In: *International Journal of Remote Sensing* 38.8-10, pp. 2199–2217. URL: https://doi.org/10.1080/01431161.2016.1239288

44. J. E. Ball, D. T. Anderson, and **S. Samiappan** (June 13, 2014). "Hyperspectral Band Selection Based on the Aggregation of Proximity Measures for Automated Target Detection". In: *Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery* 9088, pp. 908814–. URL: https://lens.org/047-861-140-764-10X
45. **S. Samiappan**, S. Prasad, and L. M. Bruce (2013). "Non-Uniform Random Feature Selection and Kernel Density Scoring With SVM Based Ensemble Classification for Hyperspectral Image Analysis". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 6.2, pp. 792–800. URL: https://doi.org/10.1109/JSTARS.2013.2237757
46. B. Sridhar, I. A. Sheriff, K. A. N. Kutty, and **S. Samiappan** (2010). "Comparison of Cascaded LMS-RLS, LMS and RLS Adaptive Filters in Non-Stationary Environments". In: *Novel Algorithms and Techniques in Telecommunications and Networking*. Ed. by Tarek Sobh, Khaled Elleithy, and Ausif Mahmood. Dordrecht: Springer Netherlands, pp. 495–499. URL: https://doi.org/10.1007/978-90-481-3662-9_85

Conference/Workshop Proceedings

1. R Maram, **S. Samiappan**, and S Yoon (2024). "Detection and Classification of Plastic Contaminants on Chicken Meat using Color and Hyperspectral Imaging". In: *IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium*
2. R.P Yadav, **S. Samiappan**, N Gray, and G Turnage (2024). "Mapping High-Resolution UAS imagery: Unveiling the Computational Expenses and Carbon Cost". In: *IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium*
3. G Turnage, J.S. Wolfe, P Dash, G.D. Chesser, R.J. Moorhead, J Moorhead, D McCraine, L Hathcock, **S. Samiappan**, J.W Lowe, and J Harris (2023). "Real Time Monitoring of Water Quality with an Autonomous Surface Vessel in a Coastal Estuary". In: *OCEANS 2023 - MTS/IEEE U.S. Gulf Coast*, pp. 1–6. URL: https://doi.org/10.23919/OCEANS52994.2023.10337340
4. **S. Samiappan** and R. Bheemanahalli (2021). "Early Detection of Root-Knot Nematode (Meloidogyne Incognita) Infestation in Cotton Using Hyperspectral Data". In: *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*, pp. 493–496. URL: https://doi.org/10.1109/IGARSS47720.2021.9554055
5. M. Zhou, **S. Samiappan**, E. Worch, and J. E. Ball (2020). "Hyperspectral Image Classification Using Fisher's Linear Discriminant Analysis Feature Reduction With Gabor Filtering and CNN". in: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*, pp. 493–496. URL: https://doi.org/10.1109/IGARSS39084.2020.9323727
6. E. Worch, **S. Samiappan**, M. Zhou, and J. E. Ball (2020). "Hyperspectral Band Selection Using Moth-Flame Metaheuristic Optimization". In: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*, pp. 1271–1274. URL: https://doi.org/10.1109/IGARSS39084.2020.9323754

7. **S. Samiappan**, A. Shamaskin, J. Liu, A. Linhoss, and K. O. Evans (2020). "Strategic Conservation of Gulf Coast Landscapes Using Multi-Criteria Decision Analysis and Open Source Remote Sensing and GIS Data". In: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*, pp. 6662–6665. URL: https://doi.org/10.1109/IGARSS39084.2020.9323166
8. S. Sawant, P. Manoharan, and **S. Samiappan** (2019). "A Band Selection Method for Hyperspectral Image Classification Based on Cuckoo Search Algorithm With Correlation Based Initialization". In: *2019 10th Workshop on Hyperspectral Imaging and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, pp. 1–4. URL: https://doi.org/10.1109/WHISPERS.2019.8920950
9. J. M. P. Czarnecki and **S. Samiappan** (2019). "A the Application of Structure From Motion Techniques in Late-Season Corn Damage". In: *2019 Proceedings of Precision Agriculture, Montpellier, France*, pp. 405–411. URL: https://doi.org/10.3920/978-90-8686-888-9_50
10. C. D. McCraine, **S. Samiappan**, J. M. P. Czarnecki, and D. M. Dodds (2019). "Plant Density Estimation and Weeds Mapping on Row Crops at Emergence Using Low Altitude UAS Imagery". In: *Autonomous Air and Ground Sensing Systems for Agricultural Optimization and Phenotyping IV*. ed. by J. Alex Thomasson, Mac McKee, and Robert J. Moorhead. Vol. 11008. International Society for Optics and Photonics. SPIE, pp. 249–257. URL: https://doi.org/10.1117/12.2520252
11. **S. Samiappan**, L. Casagrande, G. M. Machado, G. Turnage, L. A. Hathcock, R. J. Moorhead, and J. Ball (2018). "Texture Classification of Very High Resolution UAS Imagery Using a Graphics Processing Unit". In: *IGARSS 2018 - 2018 IEEE International Geoscience and Remote Sensing Symposium*, pp. 6476–6479. URL: https://doi.org/10.1109/IGARSS.2018.8519298
12. P. Manoharan, S.. Sawant, and **S. Samiappan** (2018). "Texture Classification of Very High Resolution UAS Imagery Using a Graphics Processing Unit". In: *Proceedings of Asian Conference on Remote Sensing*
13. L. Casagrande, G. M. Machado, **S. Samiappan**, G. Turnage, L. A. Hathcock, and R. J. Moorhead (2017). "Probabilistic Neural Network and Wavelet Transform for Mapping of Phragmites Australis Using Low Altitude Remote Sensing". In: *2017 30th SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI)*, pp. 269–276. URL: https://doi.org/10.1109/SIBGRAPI.2017.42
14. R. J. Moorhead, J. M. P. Czarnecki, **S. Samiappan**, and W. B. Henry (2017). "Swimming in Sensors and Drowning in Data: What Is Needed for UASs to Be Effective?" In: *Autonomous Air and Ground Sensing Systems for Agricultural Optimization and Phenotyping II*. ed. by J. Alex Thomasson, Mac McKee, and Robert J. Moorhead. Vol. 10218. International Society for Optics and Photonics. SPIE, pp. 141–148. URL: https://doi.org/10.1117/12.2267721
15. **S. Samiappan**, G. Turnage, L. A. Hathcock, H. Yao, R. Kincaid, R. J. Moorhead, and S. Ashby (2017). "Classifying Common Wetland Plants Using Hyperspectral Data to Identify Optimal Spectral Bands for Species Mapping Using a Small

Unmanned Aerial Systems — A Case Study". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, pp. 5924–5927. URL: https://doi.org/10.1109/IGARSS.2017.8128357

16. J. M. P. Czarnecki and **S. Samiappan** (2017). "Applications of Unmanned Aerial Vehicles in Weed Science". In: *Proceedings of 11th European Conference on Precision Agriculture*. Cambridge University Press, Edinburgh, Scotland
17. **S. Samiappan**, L. Dabbiru, and R. J. Moorhead (2016). "Fusion of Hyperspectral and LiDAR Data Using Random Feature Selection and Morphological Attribute Profiles". In: *2016 8th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, pp. 1–4. URL: https://doi.org/10.1109/WHISPERS.2016.8071662
18. **S. Samiappan** and R. J. Moorhead. (2015). "Semi-Supervised Co-Training and Active Learning Framework for Hyperspectral Image Classification". In: *2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, pp. 401–404. URL: https://doi.org/10.1109/IGARSS.2015.7325785
19. L. Dabbiru, **S. Samiappan**, R. A. A. Nobrega, J. A. Aanstoos, N. H. Younan, and R. J. Moorhead. (2015). "Fusion of Synthetic Aperture Radar and Hyperspectral Imagery to Detect Impacts of Oil Spill in Gulf of Mexico". In: *2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, pp. 1901–1904. URL: https://doi.org/10.1109/IGARSS.2015.7326165
20. **S. Samiappan**, L. M. Bruce, H. Yao, Z. Hruska, R. L. Brown, D. Bhatnagar, and T. E. Cleveland. (2013). "Support Vector Machines Classification of Fluorescence Hyperspectral Image for Detection of Aflatoxin in Corn Kernels". In: *2013 5th Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, pp. 1–4. URL: https://doi.org/10.1109/WHISPERS.2013.8080645
21. **S. Samiappan**, S. Prasad, and L. M. Bruce. (2011). "Automated Hyperspectral Imagery Analysis via Support Vector Machines Based Multi-Classifier System With Non-Uniform Random Feature Selection". In: *2011 IEEE International Geoscience and Remote Sensing Symposium*, pp. 3915–3918. URL: https://doi.org/10.1109/IGARSS.2011.6050087
22. **S. Samiappan**, S. Prasad, L. M. Bruce, and E. A. Hansen. (2011). "Branch and Bound Based Feature Elimination for Support Vector Machine Based Classification of Hyperspectral Images". In: *2011 IEEE International Geoscience and Remote Sensing Symposium*, pp. 2523–2526. URL: https://doi.org/10.1109/IGARSS.2011.6049725
23. **S. Samiappan**, S. Prasad, L. M. Bruce, E. A. Hansen, and W. Robles. (2010). "NASA's Upcoming HyspIRI Mission — Precision Vegetation Mapping With Limited Ground Truth". In: *2010 IEEE International Geoscience and Remote Sensing Symposium*, pp. 3744–3747. URL: https://doi.org/10.1109/IGARSS.2010.5651974
24. S. Prasad, H. Kalluri, L. M. Bruce, and **S. Samiappan** (2010). "Data Dependent Adaptation for Improved Classification of Hyperspectral Imagery". In: *2010 IEEE International Geoscience and Remote Sensing Symposium*, pp. 68–71. URL: https://doi.org/10.1109/IGARSS.2010.5653683

25. A. Baskar, P. Manoharan, and **S. Samiappan** (2007). "Improved Adaptive Skip Algorithm for Video Shot Boundary Detection". In: *2007 International Conference on Signal Processing, Communications and Networking*, pp. 492–496. URL: https://doi.org/10.1109/ICSCN.2007.350787

Other Conference Presentations

1. B. Santhana Krishnan, **S. Samiappan**, L. R. Jones, J. A. Elmore, E. Schultz, K. O. Evans, B. F. Blackwell, M. B. Pfeiffer, and R. B. Iglay (2022). *Artificial intelligence for detection and classification of wildlife from small Uncrewed Aircraft Systems (sUAS) imagery.* 2022 Annual Conference of The Wildlife Society, The Wildlife Society, Spokane, WA. (November 2022)
2. E. Schultz, B. Santhana Krishnan, L. R. Jones, J. A. Elmore, R. B. Iglay, K. O. Evans, and **S. Samiappan** (2022). *Automated image classification with convolutional neural networks for large image datasets: a biologist's perspective.* 2022 Annual Conference of The Wildlife Society, The Wildlife Society, Spokane, WA. (November 2022)
3. L. R. Jones, J. A. Elmore, B. Santhana Krishnan, E. Schultz, **S. Samiappan**, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *Controllable factors affecting accuracy of human identification of animals in images obtained during small Uncrewed Aircraft Systems (sUAS) surveys.* 2022 Annual Conference of The Wildlife Society, The Wildlife Society, Spokane, WA. (November 2022)
4. J. A. Elmore, E. Schultz, L. R. Jones, **S. Samiappan**, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *Systematic map effort of using small Unoccupied Aircraft Systems (sUAS) to monitor animals.* 2022 Annual Conference of The Wildlife Society, The Wildlife Society, Spokane, WA. (November 2022)
5. **S. Samiappan (Author & Presenter)**, A. Shah, L. G. Turnage, and C. McCraine (2022). *Automated classification of aquatic invasive plants using deep learning AI and visible spectrum imagery.* MidSouth Aquatic Plant Management Society annual conference, Mobile, AL. (October 2022)
6. S. Boopalan, **S. Samiappan**, J. A. Elmore, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *Artificial Intelligence for Detection and Classification of Wildlife From UAS Imagery.* 2022 North America Bird Strike Conference, American Association of Airport Executives, Salt Lake City (July 19, 2022)
7. J. A. Elmore, E. A. Shultz, L. J. Jones, **S. Samiappan**, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *A Systematic Map of Utilizing Small Unoccupied Aircraft Systems (UAS) to Monitor Wildlife.* 2022 North America Bird Strike Conference, American Association of Airport Executives, Salt Lake City (July 19, 2022)
8. L. J. Jones, S. Boopalan, E. A. Shultz, J. A. Elmore, **S. Samiappan**, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *Controllable Factors Affecting Accuracy of Human Identification of Wildlife in Images Obtained During*

UAS Surveys. 2022 North America Bird Strike Conference, American Association of Airport Executives, Salt Lake City (July 19, 2022)

9. D. Dehart, S. Boopalan, **S. Samiappan (Author & Presenter)**, J. A. Elmore, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *Aerial Wildlife Image Repository (AWIR) – A Dataset and Collaborative Environment to Label and Classify Wildlife From Aerial Imagery.* 2022 North America Bird Strike Conference, American Association of Airport Executives, Salt Lake City (July 19, 2022)
10. J. A. Elmore, E. A. Shultz, S. Boopalan, **S. Samiappan**, J. A. Elmore, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *a Systematic Map of Utilizing Small Unoccupied Aircraft Systems (UAS) to Monitor Birds and Other Wildlife.* 2022 American Ornithological Society Conference, San Juan, Puerto Rico. (July 2022)
11. L. J. Jones, E. A. Shultz, S. Boopalan, **S. Samiappan**, J. A. Elmore, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2022). *Controllable Factors Affecting Accuracy of Human Identification of Birds in Images Obtained During UAS Surveys.* 2022 American Ornithological Society Conference, San Juan, Puerto Rico. (July 2022)
12. P. Ramamoorthy, J. S. Dhillon, **S. Samiappan**, J. M. P. Czarnecki, K. R. Reddy, R. J. Moorhead, and R. Bheemanahalli (2022). *Harnessing the Genetic Potential of Corn Hybrids for Better Synergy With the Cover Crop Farming System.* 4th Annual MAS Summer Science and Engineering Symposium, June 8, Mississippi State University, MS. (Poster presentation)
13. A. Shrestha, P. Ramamoorthy, A. Ardeshir, C. D. McCraine, **S. Samiappan**, J. M. P. Czarnecki, K. R. Reddy, R. J. Moorhead, and R. Bheemanahalli (2022). *Predicting Yields of Rainfed Grown Cotton Using Unmanned Aerial System Datasets.* 4th Annual MAS Summer Science and Engineering Symposium, June 8, Mississippi State University, MS. (Poster presentation)
14. P. Ramamoorthy, R. Bheemanahalli, **S. Samiappan**, M. Wubben, A. Shrestha, J. Brooks, and K. R. Reddy (2022). *Hyperspectral Reflectance and Physiological Techniques for Diagnosing Plant Health Status of Cotton Under Drought and Root-Knot Nematode.* Mississippi Academy of Sciences, 86th Annual Meeting, March 31 - April 01, Biloxi, MS. (Poster presentation- Awarded first place)
15. P. Ramamoorthy, R. Bheemanahalli, N. Wijewardane, **S. Samiappan**, D. Brand, and K. R. Reddy (2022). *Drought and Heat Stress Effects on Physiology, Pollen Germination, and Leaf Reflectance Properties of Corn.* Presented at The Southern Branch of American Society of Agronomy, February 12-14, New Orleans, LA. (Poster)
16. R. Bheemanahalli, A. Ardeshir, N. N. Kodadinne, C. D. McCraine, A. Shrestha, **S. Samiappan**, J. M. P. Czarnecki, K. R. Reddy, and R. J. Moorhead (2022). *Corn Growth, Leaf Pigments, and Canopy Reflectance Properties in Response to Cover Cropping.* Presented at The Southern Branch of American Society of Agronomy, February 12-14, New Orleans, LA. (Poster)

17. A. L. Sesser, S. Westlake, J. Roberts, **S. Samiappan**, Y. Allen, T. Hopkins, J. Liu, Y. Liang, and K. O. Evans (2021). *Priority-Driven Decision Support Tools: A Co-Production Case Study From the Gulf of Mexico Region.* American Geophysical Union 2021 Fall Meeting, American Geophysical Union, New Orleans, LA. (December 13, 2021)
18. **S. Samiappan (Author & Presenter).**, K. O. Evans, A. L. Sesser, S. Westlake, Y. Liang, T. Hopkins, and Y. Allen (2021). *Strategic Conservation Assessment Tool Hub – A Transferable Framework for Conservation Prioritization and Visualization.* American Geophysical Union 2021 Fall Meeting, American Geophysical Union, New Orleans, LA. (December 13, 2021)
19. **S. Samiappan (Author & Presenter)**, J. A. Elmore, M. Zhou, M. B. Pfeiffer, B. F. Blackwell, R. B. Iglay, and K. O. Evans (2021a). *Aerial Wildlife Image Repository (AWIR) – A Dataset to Accelerate the Development of Highly Accurate Machine Learning Models to Classify Wildlife From Aerial Imagery.* 2021 Annual Conference of The Wildlife Society, The Wildlife Society, Virtual. (November 2021)
20. M. Zhou, J. A. Elmore, **S. Samiappan (Author & Presenter)**, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2021a). *Classifying Wildlife From Aerial Imagery Using Deep Learning Neural Networks.* 2021 Annual Conference of The Wildlife Society, The Wildlife Society, Virtual. (November 2021)
21. J. A. Elmore, K. O. Evans, **S. Samiappan**, M. Zhou, M. B. Pfeiffer, B. F. Blackwell, and R. B. Iglay (2021a). *Systematic Map Effort of Using Small Unoccupied Aircraft Systems (sUAS) to Monitor Animals.* 2021 Annual Conference of The Wildlife Society, The Wildlife Society, Virtual. (November 2021)
22. J. A. Elmore, K. O. Evans, **S. Samiappan**, M. Zhou, M. B. Pfeiffer, B. F. Blackwell, and R. B. Iglay (2021b). *Systematic Map Effort of Using Small Unoccupied Aircraft Systems (sUAS) to Monitor Birds.* 2021 American Ornithological Society Conference, American Ornithological Society, Virtual. (August 2021)
23. J. A. Elmore, K. O. Evans, **S. Samiappan**, M. Zhou, M. B. Pfeiffer, B. F. Blackwell, and R. B. Iglay (2021c). *Systematic Map Effort of Using Small Unoccupied Aircraft Systems (sUAS) to Monitor Birds.* 2021 North America Bird Strike Conference, American Association of Airport Executives, Virtual. (August 2021)
24. R. B. Iglay, J. A. Elmore, M. Zhou, K. O. Evans, **S. Samiappan**, M. B. Pfeiffer, and B. F. Blackwell (2021). *The Unpublished Realities of Wildlife Monitoring With Unoccupied Aircraft Systems (UAS): A Survey of End Users.* 2021 North America Bird Strike Conference, American Association of Airport Executives, Virtual. (August 2021)
25. M. Zhou, J. A. Elmore, **S. Samiappan (Author & Presenter)**, R. B. Iglay, K. O. Evans, B. F. Blackwell, and M. B. Pfeiffer (2021b). *Classifying Wildlife From Aerial Imagery Using Deep Learning Neural Networks.* 2021 North America Bird Strike Conference, American Association of Airport Executives, Virtual. (August 2021)
26. K. O. Evans, A. L. Sesser, **S. Samiappan**, J. Liu, A. Shamaskin, S. Westlake, Y. Allen, A. Linhoss, and T. Hopkins (2021). *The Strategic Conservation Assess-*

ment of Gulf Coast Landscapes: Land Conservation Planning Using a Co-Production Science Approach. North America 2021 Annual Meeting, International Association of Landscape Ecology – North America, Virtual. (April 14, 2021)

27. R. B. Iglay, J. A. Elmore, M. Zhou, K. O. Evans, **S. Samiappan**, M. B. Pfeiffer, and 2021 B. F. Blackwell (2021). *The Unpublished Realities of Wildlife Monitoring With Unoccupied Aircraft Systems (UAS): A Survey of End Users.* Annual Conference of The Wildlife Society, The Wildlife Society, Virtual. (November 2021)
28. **S. Samiappan (Author & Presenter)**, R. Bheemanahalli, M. Zhou, and K. R. Reddy (2021a). *Classification of Field Crops Grown Under Soil Salinity Conditions Using Hyperspectral Remote Sensing Algorithms.* Mississippi Academy of Sciences Annual Meeting, Mississippi Academy of Sciences, Biloxi, MS. (Poster) (August 5, 2021)
29. P. Ramamoorthy, R. Bheemanahalli, M. W. Shankle, **S. Samiappan**, and K. R. Reddy (2021). *Effect of Drought Stress on Early Crop Establishment and Its Relevance to Storage Root Development in Sweetpotato.* Mississippi Academy of Sciences Annual meeting, Mississippi Academy of Sciences, Biloxi, MS. (Poster) (August 5, 2021)
30. R. Bheemanahalli, A. Shrestha, N. N. Kodidinne., **S. Samiappan**, J. M. P. Czarnecki, C. D. McCraine, and K. R. Reddy (2021). *Integrated Aerial and Destructive Methods Differentiate Plant Health of Cotton in Response to Cover Cropping.* Mississippi Academy of Sciences Annual Meeting, Mississippi Academy of Sciences, Biloxi, MS. (Poster) (August 5, 2021)
31. **S. Samiappan (Author & Presenter)**, K. O. Evans, A. L. Sesser, S. M. Westlake, Y. Liang, T. E. Hopkins, and Y. Allen (2021). *Strategic Conservation Assessment Tool Hub – A Transferable Framework for Conservation Prioritization and Visualization.* Presented at The American Geophysical Union 2021 Fall Meeting, New Orleans, LA
32. **S. Samiappan (Author & Presenter)**, J. A. Elmore, M. Zhou, M. B. Pfeiffer, B. F. Blackwell, R. B. Iglay, and K. O. Evans (2021b). *Aerial Wildlife Image Repository (AWIR) – A Dataset to Accelerate the Development of Highly Accurate Machine Learning Models to Classify Wildlife From Aerial Imagery.* Presented at The Wildlife Society annual conference (virtual online)
33. **S. Samiappan (Author & Presenter)**, R. Bheemanahalli, M. Zhou, and K. R. Reddy (2021b). *Classification of Field Crops Grown Under Soil Salinity Conditions Using Hyperspectral Remote Sensing Algorithms.* Presented at Mississippi Academy of Sciences Annual Conference, Biloxi, MS
34. A. Shamaskin, **S. Samiappan**, A. Linhoss, and K. O. Evans (2020). *A Land Conservation Visualization Tool for the US Gulf of Mexico Region.* 2020 Bays and Bayous Symposium, National Oceanic and Atmospheric Administration, Virtual Online. (December 3, 2020)
35. **S. Samiappan (Author & Presenter)**, A. Linhoss, K. O. Evans, and A. Shamaskin (2020). *Strategic Conservation Assessment Tool Suite: A Science-Based Data-Driven Land Conservation Tools for the Us Gulf of Mexico Region.* 2020 Bays and Bayous

Symposium, National Oceanic and Atmospheric Administration, Virtual Online. (December 3, 2020)

36. K. O. Evans, **S. Samiappan**, and A. Linhoss (2020). *A Land Conservation Prioritization Tool for the Us Gulf of Mexico Region*. 2020 Bays and Bayous Symposium, National Oceanic and Atmospheric Administration, Virtual Online. (December 1, 2020)

37. X. Pan, **S. Samiappan**, and 2020 G. Feng (2020). *Automated Mapping of Land Use/Land Cover in Google Earth Engine Platform Using Landsat Time-Series and MODIS*. International Annual Meeting - The American Society of Agronomy, the Crop Science Society of America, and the Soil Science Society of America Virtual. (November 10, 2020)

38. **S. Samiappan (Author & Presenter)**, M. Zhou, and R. J. Moorhead (2020a). *Identifying Wildlife From Aerial Imagery Using CNNs*. The Wildlife Society 27th Annual Conference, The Wildlife Society, Virtual Online. (September 27, 2020)

39. C. D. McCraine, **S. Samiappan**, and R. J. Moorhead (2020). *Overview of sUAS Imagery for Wildlife Monitoring*. The Wildlife Society 27th Annual Conference, The Wildlife Society, Virtual Online. (September 27, 2020)

40. K. O. Evans, A. L. Sesser, **S. Samiappan**, J. Liu, A. Shamaskin, A. Linhoss, S. Ashby, J. Tirpak, R. Kirpes, and L. W. Burger (2020). *Strategic Conservation Assessment Project: Co-Production Science and Geospatial Technology for Land Conservation Planning in the Gulf of Mexico Region*. North American Congress on Conservation Biology, Society for Conservation Biology, Virtual. (July 2020)

41. *Strategic Conservation Assessment Tool Suite: A Science-Based Conservation Framework for the US Gulf of Mexico Region* (2020). 2020 Mississippi Water Resources Conference, Mississippi Water Resources Research Institute, Jackson, MS. (April 1, 2020)

42. A. Shamaskin, K. O. Evans, S. Correa., G. M. Street, A. Linhoss, and **S. Samiappan** (2020). *Considering Estuarine Biotic Health as an Implication of Land Conservation*. Southern Division of the American Fisheries Society,, Little Rock, AR. (February 2020)

43. **S. Samiappan (Author & Presenter)**, A. Linhoss, K. O. Evans, J. Liu, A. Shamaskin, and S. Ashby (2020). *A Science Based Land Conservation Prioritization Framework Based Multicriteria Acceptability Analysis*. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Gulf of Mexico Research Initiative, Tampa, FL. (February 6, 2020)

44. A. Shamaskin, **S. Samiappan**, A. Linhoss, J. Liu, and K. O. Evans (2020). *Mapping Hydrologic Response to Land-Use Change in the Gulf Coast*. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Gulf of Mexico Research Initiative, Tampa, FL. (February 6, 2020)

45. K. O. Evans, J. Roberts, M. Heinemann, **S. Samiappan**, J. Liu, A. Shamaskin, A. Linhoss, S. Ashby, and L. M. Burger (2020). *The Strategic Conservation Assessment of Gulf Coast Landscapes: Land Conservation Planning Tools Using a Co-*

Production Science Approach. Gulf of Mexico Oil Spill & Ecosystem Science Conference, Gulf of Mexico Research Institute, Tampa, FL. (February 3, 2020)

46. R. Bheemanahalli, **S. Samiappan**, N. N. Kodadinne, C. D. McCraine, J. M. P. Czarnecki, A. Ardeshir, and R. J. Moorhead (2020). *Evaluation of Cotton Seeding Performance at Early Growth Stage Following Cover Cropping Using Aerial Imagery.* 2020 ASA-CSSA-SSSA International Annual Meeting, (Poster) (November 2020)
47. **S. Samiappan (Author & Presenter)**, M. Zhou, and R. J. Moorhead. (2020b). *Identifying Wildlife From Aerial Imagery Using CNNs.* Presented at The Wildlife Society annual conference (virtual online)
48. **S. Samiappan (Author & Presenter)** and A. Shamaskin. (2020). *A Science-Based Land Conservation Prioritization Framework Based Multicriteria Acceptability Analysis.* Presented at 2020 Gulf of Mexico Oil Spill and Ecosystem Science Conference, Tampa, FL
49. J. Roberts, K. O. Evans, A. Linhoss, J. Liu, **S. Samiappan**, M. Heinemann, and A. Shamaskin (2019). *Evaluating the Social, Economic, and Ecological Benefits of Land Conservation in the Gulf of Mexico.* Coastal and Estuarine Research Foundation, Mobile, AL. (November 2019)
50. A. Shamaskin, K. O. Evans, G. M. Street, S. Correa., A. Linhoss, **S. Samiappan**, and J. Liu (2019a). *Valuing Land Conservation to Support Estuarine Biotic Health in the Gulf of Mexico – A Hierarchical Approach.* Coastal and Estuarine Research Foundation, Mobile, AL. (November 4, 2019).
51. G. Turnage, **S. Samiappan**, L. A. Hathcock, and R. J. Moorhead (2019). *Detection and Differentiation of Phragmites Australis Using Unmanned Aerial Systems Technology.* American Fisheries Society & The Wildlife Society 2019 Joint Annual Conference, The Wildlife Society and American Fisheries Society, Reno, Nevada. (September 29, 2019)
52. A. Shamaskin, K. O. Evans, G. M. Street, S. Correa., A. Linhoss, **S. Samiappan**, and J. Liu (2019b). *Valuing Land Conservation to Support Estuarine Biotic Health in the Gulf of Mexico – A Hierarchical Approach.* The Wildlife Society and American Fisheries Society 2019 Annual Conference, The Wildlife Society and American Fisheries Society, Reno, Nevada. (September 29, 2019)
53. K. O. Evans, J. Roberts, **S. Samiappan**, J. Liu, M. Heinemann, A. Shamaskin, A. Linhoss, J. Tirpak M., S. Ashby, M. Snider, and J. Henkel (2019). *Strategic Conservation Assessment of Gulf Coast Landscapes: Multi-Criteria Decision Analysis Tools Facilitate Gulf Coast Land Conservation.* Ecological Society of America, Lousiville, KY. (August 14, 2019)
54. A. Linhoss, J. M. P. Czarnecki, and **S. Samiappan** (2019a). *Remotely Sensing Sediment Tracers.* American Society of Agricultural and Biological Engineers annual meeting, Boston, MA. (July 8, 2019)
55. A. Linhoss, K. O. Evans, **S. Samiappan**, J. Liu, J. Roberts, A. Shamaskin, and S. Ashby (2019). *Comprehensive Review of Plans, Priorities and Efforts for*

Land Conservation in the Gulf of Mexico Coast. 2019 Mississippi Water Resources Conference, Mississippi water resources association, Jackson, MS. (April 2, 2019)

56. **S. Samiappan (Author & Presenter)**, A. Linhoss, K. O. Evans, J. Roberts, and A. Shamaskin J. Liu (2019). *Land Conservation Prioritization Using Multi-Criteria Decision Analysis.* 2019 Mississippi Water Resources Conference, Mississippi water resources association, Jackson, MS. (April 2, 2019)
57. A. Linhoss, J. M. P. Czarnecki, and **S. Samiappan** (2019b). *Remotely Sensing Sediment Tracers.* Mississippi Water Resources Conference, Mississippi Water Resources Research Institute, Jackson, MS. (April 2, 2019)
58. J. M. P. Czarnecki, C. D. McCraine, **S. Samiappan**, and D. M. Dodds (2019). *Automated Detection of Weeds in Cotton With Unmanned Aerial Systems.* North MS Producers Advisory Council annual meeting, Mississippi State University, Verona, MS. (Poster) (February 20, 2019)
59. J. Liu, A. Shamaskin, and **S. Samiappan** (2019). *Dynamic Rshiny Applications to Support Gulf of Mexico Land Conservation.* Presented at American Fisheries Society and The Wildlife Society 2019 Joint Annual Conference, Reno, NV (Author)
60. A. Shamaskin, K. Evans, and **S. Samiappan** (2019). *Valuing Land Conservation to Support Estuarine Biotic Health in the Gulf of Mexico – A Hierarchical Approach.* Presented at American Fisheries Society and The Wildlife Society 2019 Joint Annual Conference, Reno, NV (Author)
61. **S. Samiappan (Author & Presenter)** and A. Shamaskin (2019). *Science-Based Land Conservation Prioritization Framework: An Overview.* Presented at Mississippi Water Resource Conference, Jackson, MS
62. G. Turnage, **S. Samiappan**, L. Hathcock, and R. J. Moorhead. (2018). *Detection of Aquatic Plant Species Using UAS Technology.* Presented at 15th International Symposium on Aquatic Plants, Queenstown, New Zealand
63. C. D. McCraine, **S. Samiappan**, G. Turnage, L. Hathcock, H. Yao, R. Kincaid, R. J. Moorhead, and S. Ashby. (2018). *Classifying Common Aquatic Plants Using Hyperspectral Data to Identify Optimal Spectral Bands for Species Mapping Using a Small Unmanned Aerial System – A Case Study.* Presented at the Society of Lake Management Professionals annual conference, Baton Rouge, LA
64. **S. Samiappan**, C. D. McCraine, and L. Hathcock (2017). *Wildfire Mapping and Damage Analysis in Grand Bay National Estuarine Research Reserve, Mississippi Using a Small Unmanned Aerial System With a Multispectral Payload.* Presented at 2017 The Wildlife Society annual conference, Albuquerque, NM
65. G. Turnage, **S. Samiappan (Author & Presenter)**, L. Hathcock, and R. J. Moorhead (2016). *Mapping of Phragmites Australis Using 5-Band Imagery Collected From an Unmanned Aerial System.* Presented at 2016 The Wildlife Society annual conference, Raleigh, NC
66. **S. Samiappan (Author & Presenter)**, A. Crain, and L. Hathcock (2016). *Identification and Estimation of Damage Caused by Feral Hogs in Corn Fields Using Change*

Detection and an Unmanned Aerial System. Presented at The Wildlife Society annual conference 2018, Raleigh, NC

67. P. Burr, **S. Samiappan**, and L. Hathcock (2016). *Estimating the Distribution and Abundance of Water Birds on Catfish Aquaculture Facilities Using Imagery Collected From an Unmanned Aerial System.* Presented at The Wildlife Society annual conference 2016, Raleigh, NC
68. G. Turnage, **S. Samiappan (Author & Presenter)**, and L. Hathcock (2016). *Mapping of Phragmites Australis Using 5-Band Imagery Collected From an Unmanned Aerial System.* Presented at Midsouth Aquatic Plant Management Society conference, 12-14 September, Baton Rouge LA
69. **S. Samiappan (Author & Presenter)**, G. Turnage, and R. J. Moorhead. (2016). *Identifying and Mapping Chinese Tallow Tree Using Unmanned Aerial Systems and Multispectral Imagery.* Presented at Midsouth Aquatic Plant Management Society conference, 12-14 September, Baton Rouge LA
70. **S. Samiappan (Author & Presenter)**, B. W. Henry, and R. J. Moorhead. (2016). *Plant Stand Count and Corn Crop Density Assessment Using Texture Analysis on Visible Imagery Collected Using Unmanned Aerial Vehicles.* Presented at the 13th International conference on Precision Agriculture, July 31 - Aug 03 2016, St.Louis, MO
71. **S. Samiappan** and R. J. Moorhead. (2016). *Mapping of Phragmites Australis in Gulf of Mexico Wetlands Using Small UAS.* Presented at the Gulf of Mexico Oil Spill and Ecosystem Science conference, 1-4 February 2016, Tampa, FL
72. M. Hock, W. B. Henry, and **S. Samiappan** (2016). *Evaluating Texture Modelling Techniques to Determine Stand Establishment and Plant Populations in Corn.* Presented at South branch American society of Agronomy, 7-9 February, San Antonio, TX
73. G. Turnage, P. Stinson, and **S. Samiappan** (2015). *Mapping of Common Reed (Phragmites Australis) Using Unmanned Aerial Vehicles, Gray Level Co-Occurrence Matrix Texture Extraction, and eCogntion.* Presented at Midsouth Aquatic Plant Management Society conference, 14-16 September Mobile, AL
74. K. Grissom, **S. Samiappan**, R. Beets, D. Petraitis, and Z. Zhou. (2013). *Improvements to the TAO Web-Based Data Management System.* Presented at NOAA's 38th Climate Diagnostics and Prediction Workshop, 21-24 October 2013 College Park, MD

Dissertation and Thesis

- **Doctoral - S. Samiappan** (2014). "Spectral Band Selection for Ensemble Classification of Hyperspectral Images With Applications to Agriculture and Food Safety". In: *Mississippi State University.* URL: https://www.globethesis.com/?t=1478390017491594

- **Masters - S. Samiappan** (2006). "Extraction of Saliency Regions Using Human Visual Attention Model". In: *Amrita University*
- **Undergraduate - S. Samiappan** (2003). "Industrial Air Quality Monitoring (CO2) Using PIC 16F877A Microcontroller". In: *Bharathiar University*

ACADEMIC ACCOMPLISHMENTS

Graduate Students and Postdocs

- **Rishita Garg** M.S Computational Engineering 2023-2024
- **Rohini Maram** M.S Computer Science and Engineering 2023-2024
- **Ruchitha Yadav Prakash** M.S Computational Engineering 2023-2024
- **Syed Mohd Farhan** Ph.D Computational Engineering 2023-2024
- **Dheeraj Srivastava** M.S Ag Engineering - Virginia Tech Summer 2022
- **Siva Annamalai** Ph.D Computational Engineering 2020-Present

Supervising Postdoctoral and Research Associates

- **Yuchuan Fan** Postdoctoral Associate 2024
- **Meilun Zhou** Research Associate 2020-2021
- **Joseph Crumpton** Postdoctoral Associate 2021-2023
- **Santhana Krishnan Boopalan** Postdoctoral Associate 2021-2023
- **Anup Zope** Postdoctoral Associate 2022
- **Purushothaman Ramamoorthy** Postdoctoral Associate 2021 - 2023
- **Lee Hathcock** Ph.D Computer Engineering 2021-Present

Undergraduate Research

- **Piyush Chaudary Jones** B.S Electrical Engineering 2024
- **Swarup Bhattarai** B.S Electrical Engineering 2024
- **Jennefer Jones** B.S Electrical Engineering (Honors) 2023-2024
- **Nick Gray** B.S Electrical Engineering 2023-2024
- **Leon Kohler** B.S Mechanical Engineering 2022-2024
- **Damion Dehart** B.S Computer Science 2021-2022
- **Jacob Lee** B.S Computer Science (Honors) 2021-2023
- **Ashutosh Shah** B.S Mechanical Engineering 2021-2022

- **Ethan Worch** B.S Computer Engineering 2019-2020
- **Meilun Zhou** B.S Computer Engineering 2019-2020
- **Cary Daniel McCraine** B.S Electrical Engineering 2017-2018
- **Donna Jaison** B.S Electrical Engineering 2016
- **Preston Stinson** B.S Computer Engineering 2015
- **Luan Carlos da Silva Casagrande** B.S Computer Science 2015

Advising - Honors Thesis and Senior Design Teams

- **Jacob Lee** Honors Thesis : Estimation of Soil total carbon in croplands using hyperspectral remote sensing and deep learning neural networks 2023
- **Cary Daniel McCraine *et al.*** Project Title: ivWatch Sensor Test Bench System 2018
- **Luan Carlos da Silva Casagrande** Honors Thesis (Universidade Federal de Santa Catarina, Brazil): Comparative Study of Image Texture analysis And Machine Learning Methods For classification of phragmites Australis using True-Color High Resolution Images 2017
- **Manoj Kumar *et al.*** Project Title: Non-Chronological Dynamic Video Abstraction using Rack Through Method 2009
- **Sylvania Golla *et al.*** Project Title: Extracting Cricket Game Summaries via Frame Clustering 2008
- **Arunchander Kalyanasamy *et al.*** Project Title: Video object based Content-Based Video Retrieval system 2007
- **Kaushik Prakash *et al.*** Project Title: Resolution Enhancement of Color Video Sequences 2007

Courses Taught

Taught approximately 26 sections of 9 different courses at the undergraduate and graduate levels resulting in more than 1500 students. Maintained a high level of dedication to teaching, resulting in instructor evaluation scores averaging 4.3/5.0. *(Most recent teaching evaluations can be found in the application packet)*

- ECE 7000 Directed Individual Study - Special topics in machine learning for wildlife monitoring using aerial images Spring 2022
- ECE 7000 Directed Individual Study - Special topics in Computer Vision Fall 2021
- ECE3413 Introduction to Electric Circuits Fall 2015, Fall 2017, Spring 2020, Fall 2022, Spring 2023, Fall 2023

- ECE3443 Signals and Systems — Fall 2014, Fall 2006, Summer 2023
- ECE3714 Digital Devices and Logic Design - Laboratory — 2012-2014
- EC3072 Digital Communication — Spring 2009, Spring 2007
- EC5049 Adaptive Signal Processing — Fall 2008, Fall 2007
- EC3091 Analog Communication — Fall 2008, Fall 2007
- EC3020 Digital Signal Processing — Spring 2008, Spring 2007
- EC5084 Digital Image Processing — Spring 2008

SERVICE

Professional Contributions

- Session Champion - Technical session on Gulf of Mexico Initiatives at the 2023 IEEE Oceans Conference & Exposition (OCE) September 2023
- Session Chair (Sonar Signal/Image Processing 1) - OCE September 2023
- Session Chair (Sonar Signal/Image Processing 2) - OCE September 2023
- Session Chair (Gulf of Mexico Initiatives) - OCE September 2023
- Session Chair (Remote Sensing 1) - IEEE OCE September 2023
- Session Chair - IEEE International Geoscience and Remote Sensing Symposium, Brussels, Belgium July 2021
- Guest Editor - MDPI-Remote Sensing (Impact Factor 4.8) - Special Issue "Wavelet Transform for Remote Sensing Image Analysis" July 2020-2022
- Workshop Lecture - IEEE Geoscience and Remote Sensing Society Summer School (GR4S) "Image Analysis using Trimble eCognition" July 2018
- Conference Keynote - International Virtual Conference on Recent Trends, Challenges in Image Analysis & Information Security "Applications of unmanned aerial system for remote sensing and aerial image analysis" September 2018
- Peer Reviewer - Reviewed for over 30 top-tiered journals in engineering and science Publons Review Verification

University Service

- State of Mississippi - Unmanned Aerial Systems curriculum for Career and Technical Education programs – Member of curriculum development team 2017-Present
- Evaluator – Graduate Student Research Symposium (GSRS) , MSU 2016-Present
- Evaluator – Honors Undergraduate Student Symposium, MSU 2015-Present
- Faculty Mentor, Day One – Montgomery Leadership Program Day One is a service-learning community for entering freshmen in which students take a two-credit course on leadership and apply what they learn towards 20 hours of community service in the fall semester. This is offered out of the Office of Student Leadership and Community Engagement. A Mentor is a faculty who guides a single team of 5-7 students towards the completion of its community service project over the semester. Mentors help coordinate the efforts of the team with the needs of the community and help the team members develop their leadership skills. 2015-2018
- Team Mentor, Dawg Daze, MSU Dawg Daze is an exciting collection of service, other activities and events held to welcome new freshmen & transfer students to Mississippi State. 2015 and 2016

- American Cancer Foundation – Volunteer – 2014 2017-Present

COMPUTER SKILLS

- Programming: Python, Matlab, C, C++, Java, and R
- Platforms: Windows, Linux, Linux/Unix high performance computing
- Packages: Keras, PyTorch, NumPy, LibSVM
- Misc: Microsoft Office, LaTeX, and cloud based collaborative tools such as Office 365

MEMBERSHIPS

- Institute of Electrical and Electronics Engineers(IEEE) (2012-Present)
- IEEE Eta Kappa Nu (HKN) International Honor Society (2014-Present)
- The Wildlife Society (2016-2022)
- American Geophysical Union (2021-22)
- Life Member, IETE

HONORS

- IEEE Eta Kappa Nu (HKN) International Honor Society
- Full Graduate Research Assistantship, Mississippi State University (2009-14)
- Full Graduate Teaching Assistantship, Mississippi State University (2009-14)

MEDIA COVERAGE

- Hyperspectral Data: New Science to Save Islands Published in IslandConservation.org
- Drones gauge wild pigs' damage to crops Published in wildlife.org
- When invasive plants attack, a new tech tool can nip it in the bud Published in Mississippi Today
- MSU coastal researchers get to throw out their muddy boots in favor of drone Published in The Times – Picayune
- Assessment of Wild Pig Damage in Mississippi Crop Fields Published by Mississippi Soy Promotion Board
- Eating the Elephant: The Strategic Conservation Assessment for the Gulf Coast URL
- MSU Collinsville resident's research project recognized at summer undergraduate research symposium URL
- MSU wildlife professor published drone study that analyzes animals near airports URL

- Eyes in the Skies: FWRC scientists look to drones to identify potential flight disruptions URL