

F. ANTONIO MEDRANO

Curriculum Vitae

Texas A&M University–Corpus Christi (TAMUCC)
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Corpus Christi, TX 78412

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EDUCATION

- Ph.D. University of California, Santa Barbara, 2014
 Department of Geography
 Emphasis on Modeling, Measurement, and Computation
- M.S. University of California, Santa Barbara, 2009
 Media Arts and Technology Program
 Emphasis on Multimedia Engineering
- B.S. Harvey Mudd College, 2002
 Engineering, *with honors*
 Emphasis on Systems Engineering

ACADEMIC AND RESEARCH POSITIONS

- Assistant Professor** Texas A&M University–Corpus Christi (January 2019–present)
Department of Computer Science, Geospatial Computer Science Program
Conrad Blucher Institute for Surveying and Science
- Postdoctoral Researcher** University of California, Santa Barbara (August 2017–December 2018)
Bren School of Environmental Science & Management
- Co-Founder** Arogi, Inc., Santa Barbara, CA (February 2016–February 2017)
- Postdoctoral Researcher** University of California, Santa Barbara (April 2015–January 2016)
Center for Spatial Studies, Department of Geography
- Visiting Professor** Universitat Jaume I, Castellón de la Plana, Spain (September–October 2015)
Geographic Information Systems I (SIW009)

GRANTS AND FELLOWSHIPS

- 2024–2025 TEES Annual Research Conference (TARC), Intelligent EV Charging Coordination During Natural Disasters, TAMU system seed grant PI, \$2,500
- 2020–2025 NSF AI Institute: Artificial Intelligence for Environmental Sciences, #2019758, \$2.579M TAMUCC sub-award Co-PI (\$20M total award, Senior Personnel)
- 2016 NSF SBIR Phase I: Advanced Data Analytics for Public Safety, #1549445, \$149,905
- 2010–2014 Graduate Research Assistantship, funding from Argonne National Laboratories, (Summer–Fall 2010, Fall 2011–Winter 2013, Summer–Winter 2014)
- 2010 University of California Transportation Center Graduate Fellowship, \$30,000

REFEREED JOURNAL ARTICLES AND BOOK CHAPTERS

- 2025 Frazier, A., T. Nelson, P. Kedron, S. Dodge, A. Murray, J. Vukomanovic, J. Franklin, J. Miller, D. Sarkar, D. Kinka, D. Brown, A. Devenish, K. Easterday, D. Gadsden, H. Herrero, S. Leiker, N. McManus, A. Medrano, S. Meerdink, C. Molitor, M. Papes, V. Rathbone, S. Rodríguez-Buriticá, P. Roehrdanz, M. Rose, R. Singh, L. Song, A. Syphard, T. Wyckoff, Y. Youngs, S. Zuther. Advancing Conservation Science and Practice through a Geographic Approach: Platforms, Personnel, and Partnerships. *Submitted, pending review.*
- 2025 Hajiesmaeli, M., P. Tissot, F.A. Medrano, M.J. Starek. ViT-CoastDEM: A Deep Learning-Based Method to Estimate Beach Topography from Paired Non-Metric Cameras. *Submitted, pending review.*
- 2025 Church R.L., S. Wang, F.A. Medrano. A new fast-hybrid modeling approach for solving the p-median problem: CAMARO. *Submitted, pending review.*
- 2025 Vicens-Miquel, M., P. Tissot, K. Colburn, D. Williams, M.J. Starek, J. Pilartes-Congo, M. Kastl, S. Stephenson, F.A. Medrano. Machine-Learning Predictions for Total Water Levels on a Sandy Beach. *Journal of Coastal Research.* **41**(1): 57-72.
DOI: [10.2112/JCOASTRES-D-24-00016.1](https://doi.org/10.2112/JCOASTRES-D-24-00016.1)
- 2024 Vicens-Miquel, M., P. Tissot, F.A. Medrano. Exploring Deep Learning Methods for Short-Term Tide Gauge Water Level Predictions. *Water.* DOI: [10.3390/w16202886](https://doi.org/10.3390/w16202886)
- 2024 Phadke, A., F.A. Medrano, M.J. Starek. U-SMART: Unified Swarm Management and Resource Tracking Framework for Unoccupied Aerial Vehicles. *Drone Systems and Applications.* DOI: [10.1139/dsa-2024-0007](https://doi.org/10.1139/dsa-2024-0007)
- 2024 Kesireddy, A., F.A. Medrano. Elite Multi-Criteria Decision Making—Pareto Front Optimization in Multi-Objective Optimization. *Algorithms.* **17**(5), 206.
DOI: [10.3390/a17050206](https://doi.org/10.3390/a17050206)
- 2024 Phadke, A., F.A. Medrano, T. Chu, C.N. Sekharan, M.J. Starek. Modeling Wind and Obstacle Disturbances for Effective Performance Observations and Analysis of Resilience in UAV Swarms. *Aerospace.* **24**(11), 237. DOI: [10.3390/aerospace11030237](https://doi.org/10.3390/aerospace11030237)
- 2024 Phadke, A., F.A. Medrano. Increasing Operational Resiliency of UAV Swarms: An Agent-Focused Search and Rescue Framework. *Aerospace Research Communications.* **1**:12420. DOI: [10.3389/arc.2023.12420](https://doi.org/10.3389/arc.2023.12420)
- 2023 Phadke, A., F.A. Medrano. Examining Application-Specific Resiliency Implementations in UAV Swarm Scenarios. *Intelligence & Robotics.* **3**(3): 436-61.
DOI: [10.20517/ir.2023.27](https://doi.org/10.20517/ir.2023.27)
- 2023 Phadke, A., F.A. Medrano, C.N. Sekharan, T. Chu. Designing UAV Swarm Experiments: A Simulator Selection and Experiment Design Process. *Sensors.* **23**(17), 7359.
DOI: [10.3390/s23177359](https://doi.org/10.3390/s23177359)
- 2022 Vicens-Miquel, M., F.A. Medrano, P.E. Tissot, H. Kamangir, M.J. Starek, K. Colburn. A Deep Learning Based Method to Delineate the Wet/Dry Shoreline and Compute its Elevation Using High-Resolution UAS Imagery. *Remote Sensing.* **14**(23), 5990.
DOI: [10.3390/rs14235990](https://doi.org/10.3390/rs14235990)

- 2022 Phadke, A., F.A. Medrano. Towards Resilient UAV Swarms—A Breakdown of Resiliency Requirements in UAV Swarms. *Drones*. **6**(11), 340. DOI: [10.3390/drones6110340](https://doi.org/10.3390/drones6110340)
- 2021 Medrano, F.A. Effects of Raster Terrain Representation on GIS Shortest Path Analysis. *PLOS ONE*. **16**(4). DOI: [10.1371/journal.pone.0250106](https://doi.org/10.1371/journal.pone.0250106)
- 2020 Medrano, F.A. The Complete Vertex p -Center Problem. *EURO Journal on Computational Optimization* **8**, 327–343. DOI: [10.1007/s13675-020-00131-y](https://doi.org/10.1007/s13675-020-00131-y).
- 2016 Lafia, S., J. Jablonski, W. Kuhn, S. Cooley, F.A. Medrano. Spatial Discovery and the Research Library. *Transactions in GIS*. **20**, 399–412. DOI: [10.1111/tgis.12235](https://doi.org/10.1111/tgis.12235).
- 2015 Medrano, F.A., R.L. Church. A Parallel Computing Framework for Finding the Supported Solutions to a Biobjective Network Optimization Problem. *Journal of Multi-Criteria Decision Analysis*. **22**, 244-259. DOI: [10.1002/mcda.1541](https://doi.org/10.1002/mcda.1541).
- 2014 Scaparra, M.P., R.L. Church, F.A. Medrano. Corridor Location: The Multi-Gateway Shortest Path Model. *Journal of Geographical Systems*. **16**, 287–309. DOI: [10.1007/s10109-014-0197-8](https://doi.org/10.1007/s10109-014-0197-8).
- 2014 Medrano, F.A., R.L. Church. Corridor Location for Infrastructure Development: A Fast Bi-Objective Shortest Path Method for Approximating the Pareto Frontier. *International Regional Science Review*. **37**, 129–148. DOI: [10.1177/0160017613507772](https://doi.org/10.1177/0160017613507772).
- 2013 Medrano, F.A., R.L. Church. “A Parallel Algorithm to Solve Near-Shortest Path Problems on Raster Graphs.” In Shi, X., Kindratenko, V. & Yang, C. eds. *Modern accelerator technologies for geographic information science*. Springer, 83–94. DOI: [10.1007/978-1-4614-8745-6_7](https://doi.org/10.1007/978-1-4614-8745-6_7).

CONFERENCE PROCEEDINGS

- 2024 Hajiesmaeli, M., F.A. Medrano, P. Tissot. Generation of Coastal Area DEMs Using Oblique Stereo Imagery from Non-Metric Cameras with SfM Techniques, *i-GUIDE Forum 2024*, Jackson Hole, WY, October 14-16, 2024. DOI: [10.5703/1288284317809](https://doi.org/10.5703/1288284317809)
- 2023 Phadke, A., F.A. Medrano, T. Chu, C. Sekharan, M. Starek. D2D (Drone2Drone): a search and rescue framework module for finding lost UAV swarm agents, *The 21st International Conference on Embedded Systems (ESCS23)*, Las Vegas, Nevada, July 24-27, 2023. DOI: [10.1109/CSCE60160.2023.00153](https://doi.org/10.1109/CSCE60160.2023.00153).
- 2022 Phadke, A., F.A. Medrano, S. Ustymentko, T. Chu. A Study on the Inclusion of Heterogeneous Agents in Unmanned Vehicle Swarms, *The 20th International Conference on Embedded Systems (ESCS22)*, Las Vegas, Nevada, July 25-28, 2022. (*Accepted, in press*)
- 2022 Vicens Miquel, M., F.A. Medrano, P. Tissot, H. Kamangir, M. Starek. Deep Learning Automatic Detection of The Wet/Dry Shoreline at Fish Pass, Texas, 2022 *International Geoscience and Remote Sensing Symposium (IGARSS 2022)*, Kuala Lumpur, Malaysia, July 17-22, 2022. DOI: [10.1109/IGARSS46834.2022.9884633](https://doi.org/10.1109/IGARSS46834.2022.9884633)
- 2022 Phadke, A., F.A. Medrano, T. Chu. Engineering resiliency in UAV Swarms—A bibliographic analysis, *2022 International Symposium on Intelligent Unmanned Systems and artificial Intelligence (SIUSAII 2022)*, Macao, China, April 22-24, 2022. DOI: [10.1088/1742-6596/2330/1/012007](https://doi.org/10.1088/1742-6596/2330/1/012007)

- 2022 Phadke, A., F.A. Medrano, J. Brahmbhatt, S. Ustymenko. A Framework for an Optimized Smart Energy System, *2022 International Symposium on Electrical, Electronics and Information Engineering (ISEEIE 2022)*, Chiang Mai, Thailand, February 25-27, 2022. DOI: [10.1109/ISEEIE55684.2022.00049](https://doi.org/10.1109/ISEEIE55684.2022.00049)
- 2022 Phadke, A., F.A. Medrano, S. Ustymenko. Applications of Blockchain in E-government. *2022 International Symposium on Electrical, Electronics and Information Engineering (ISEEIE 2022)*, Chiang Mai, Thailand, February 25-27, 2022. DOI: [10.1109/ISEEIE55684.2022.00035](https://doi.org/10.1109/ISEEIE55684.2022.00035)
- 2021 Phadke, A., F.A. Medrano, J. Brahmbhatt. A Conceptual Framework for a Blockchain-based Tax payment Financial Service, *2021 International Conference on Computational Science and Computational Intelligence (CSCI 2021)*, December 15-17, 2021, Las Vegas, Nevada. DOI: [10.1109/CSCI54926.2021.00296](https://doi.org/10.1109/CSCI54926.2021.00296)
- 2021 Phadke, A., F.A. Medrano, S. Ustymenko. A Review of Vehicular Micro Clouds. *2021 International Conference on Computational Science and Computational Intelligence (CSCI 2021)*, December 15-17, 2021, Las Vegas, Nevada. DOI: [10.1109/CSCI54926.2021.00139](https://doi.org/10.1109/CSCI54926.2021.00139)

RESEARCH REPORTS, DISSERTATIONS, AND OTHER PUBLICATIONS

- 2024 Phadke, A., F.A. Medrano, C.N. Sekharan, T. Chu. An Analysis of Trends in UAV Swarm Implementations in Current Research: Simulation Versus Hardware. *Drone Systems and Applications*. **12**: 1-10. DOI: [10.1139/dsa-2023-0099](https://doi.org/10.1139/dsa-2023-0099)
- 2023 Phadke, A., J. Boyd, F.A. Medrano, M. Starek. Navigating the skies: examining the FAA's remote identification rule for unmanned aircraft systems. *Drone Systems and Applications*. **11**: 1-4. DOI: [10.1139/dsa-2023-0029](https://doi.org/10.1139/dsa-2023-0029)
- 2022 Phadke, A., F.A. Medrano. A conceptual Blockchain backed framework for Healthcare Data access – Extended abstract series. *Academia Letters*, Article 4944. DOI: [10.20935/AL4944](https://doi.org/10.20935/AL4944)
- 2021 Phadke, A., A. Medrano. A Resilient Multi-UAV System of Systems (SoS). *Academia Letters*, Article 1659. DOI: [10.20935/AL1659](https://doi.org/10.20935/AL1659)
- 2018 Church, R., F.A. Medrano. Location-Allocation Modeling and GIS. *The Geographic Information Science & Technology Body of Knowledge (3rd Quarter 2018 Edition)*, John P. Wilson (ed). DOI: [10.22224/gistbok/2018.3.4](https://doi.org/10.22224/gistbok/2018.3.4).
- 2016 Kuhn, W., M. Hegarty, A. Ballatore, K. Doehner, A. Medrano, D. Janelle. Report on the Center for Spatial Studies. *Center for Spatial Studies*, University of California at Santa Barbara. Retrieved from <https://escholarship.org/uc/item/02s8z0vv>
- 2015 Cooley, S., S. Lafia, A. Medrano, D. Stephens, W. Kuhn. Spatial Discovery Expert Meeting—Final Report. *Center for Spatial Studies and UCSB Library*, University of California, Santa Barbara. Retrieved from <https://escholarship.org/uc/item/64p820kg>
- 2014 Medrano, F.A. Corridor Location: Generating Competitive and Efficient Route Alternatives. *Ph.D. Dissertation*, Geography, University of California, Santa Barbara. Retrieved from <https://escholarship.org/uc/item/4g92536t>
- 2014 Medrano, F.A., R.L. Church. A Parallel Biobjective Shortest Path Algorithm. *Geotrans Report 2014-12-01*, University of California, Santa Barbara.

- 2013 Medrano, F.A., R.L. Church. Strahler Stream Order Inspired Gateway Shortest Path Subsets. *Geotrans Report 2013-12-01*, University of California, Santa Barbara.
- 2013 Medrano, F.A., R.L. Church. An Exact Biobjective Shortest Path Method with Gateway Heuristic and Supported Point Upper-Bounds. *Geotrans Report 2013-06-01*, University of California, Santa Barbara.
- 2012 Medrano, F.A., R.L. Church. A new parallel algorithm to solve the near-shortest-path problem on raster graphs. *Geotrans Report RP-01-12-01*, University of California, Santa Barbara.
- 2011 Medrano, F.A., R.L. Church. Transmission corridor location: Multi-path alternative generation using the k-shortest path method. *Geotrans Report RP-01-11-01*, University of California, Santa Barbara.
- 2009 Medrano, F.A. *Optical position sensors with applications in servo feedback subwoofer control*. M.S. Thesis, Media Arts and Technology Program, University of California, Santa Barbara. ([link](#)).

TEACHING HISTORY

Texas A&M University–Corpus Christi (TAMUCC)

- PhD level: GSCS-6331: Advanced Geospatial Computing
- MS level: GSEN-6390: Introduction to Optimization for Geographic Problems
GSEN-6395: Geospatial Engineering Research
- BS level: GISC-2438: Web Map Development (ArcGIS Maps SDK for JavaScript)
GISC-3421: Visualization for GIS (Cartography with ArcGIS Pro)
COSC-3351: Internet Programming

University of California Santa Barbara (UCSB)

- MS level: MAT-202: Mathematics for Digital Signal Processing
- BS level: GEOG-W12: Maps and Spatial Reasoning
GEOG-191: Introduction to Optimization for Geographic Problems

Universitat Jaume I (UJI)

- MS level: GIS-1: Geographic Information Systems I

STUDENT MENTORSHIP

PhD Chair

- Marina Vicens-Miquel (graduated Spring 2024, now a post-doc at the University of Oklahoma)
- Abhishek Phadke (graduated Spring 2024, now a tenure track assistant professor of computer science at Christopher Newport University (CNU))
- Adarsh Kesireddy (Summer 2021 – Summer 2024)

PhD Committee

- Mahmoud Eldefrawy (graduated Spring 2024)
- Evan Krell (graduated Fall 2024)

MS Chair

- Mona Hajiesmaeli (graduated Fall 2024)
- Gabriel Ibiassi Nambila (graduated Summer 2023)

MS Committee

- Sabin Pandey (graduated Summer 2025)
- Regmi Pratikshya (graduated Summer 2023)
- Rafael Gabriel-Jose (graduated Spring 2022)

MERITORIOUS STUDENT ACCOMPLISHMENTS

- 2024 Spring TAMUCC Three Minute Thesis (3MT) Competition, Third Place and People's Choice Award, Abhishek Phadke, \$500
- 2023-2024 TAMUCC Division of Research and Innovation Student Research Competition, Abhishek Phadke, \$800
- 2023 Spring TAMUCC Three Minute Thesis (3MT) Competition, Third Place and People's Choice Award, Abhishek Phadke, \$500
- 2022 AGU Fall Meeting Outstanding Student Presentation Award, Marina Vicens-Miquel, for:
 - Vicens-Miquel, M., F.A. Medrano, P.E. Tissot, H. Kamangir, M. Starek. Generalized Model for Wet/Dry Shoreline Detection and Total Water Level Elevation Using Deep Learning. *Poster presentation at the AGU Fall Meeting 2022*, Chicago, IL, USA, December 12-16.
- 2021-2022 TAMUCC Division of Research and Innovation Student Research Competition, Abhishek Phadke, \$775
- 2021 Spring TAMUCC Three Minute Thesis (3MT) Competition, Third Place and People's Choice Award, Abhishek Phadke, \$500
- 2020-2021 TAMUCC Division of Research and Innovation Student Research Competition, Marina Vicens Miquel, \$800

CONFERENCE PRESENTATIONS AND INVITED TALKS (presenter in bold)

- 2025 **Vicens-Miquel, M.**, P.E. Tissot, K. Colburn, D.D. Williams, M.J. Starek, J.A. Pilartes-Congo, M.A. Kastl, S.L. Stephenson, A. Medrano. “Total Water Level Predictions for a Sandy Beach: Camera-Based Measurements and an Operational Machine-Learning Model” *105th Annual AMS Meeting 2025*, New Orleans, LA. January 2025.
- 2024 **Hajiesmaeeli, M.**, A. Medrano, P.E. Tissot. “Innovative Coastal Monitoring using Non-Metric Cameras and AI to Generate a DEM Time Series” *2024 ASBPA National Coastal Conference*, Galveston, TX., August 2024.
- 2024 **Hajiesmaeeli, M.**, A. Medrano, P.E. Tissot. “Digital Elevation Model Generation using Highly Oblique Stereo Imagery via Structure from Motion Photogrammetry in a Coastal Area” *2024 Texas ASBPA Coastal Symposium*, Corpus Christi, TX. April 2024.
- 2024 **Vicens-Miquel, M.**, C. Radin, V. Nieves, P. Tissot, A. Medrano. “Empowering Coastal Resilience: A Multi-Layer Perceptron Approach for Subseasonal-to-Seasonal Sea Level Predictions in the Gulf of Mexico” *104th Annual AMS Meeting 2024*, Baltimore, MA. January 2024.
- 2024 **Vicens-Miquel, M.**, P. Tissot, A. Medrano. “Performance and Comparison of Seq2Seq and Transformer Model Architectures for the Prediction of Water Levels from Hours to Days” *104th Annual AMS Meeting 2024*, Baltimore, MA. January 2024.
- 2024 **Hajiesmaeeli, M.**, A. Medrano, P.E. Tissot. “Digital Elevation Model Generation using Highly Oblique Stereo Imagery via Structure from Motion in a Coastal Area” *104th Annual AMS Meeting 2024*, Baltimore, MA. January 2024.
- 2023 **Vicens-Miquel, M.**, C. Radin, V. Nieves, P. Tissot, A. Medrano. “Advancing Coastal Inundation Frequency Predictions with an AI-based Sub-seasonal to Multi-year Water Level Model in the Gulf of Mexico” *2023 AGU Fall Meeting*, San Francisco, CA. December 2023.
- 2023 **Tissot, P.**, M. White, M. Vicens-Miquel, H. Kamangir, F.A. Medrano. “Coastal Artificial Intelligence and the AI2ES NSF AI Institute” *2023 ASBPA National Coastal Conference*, Providence, RI., August 2023.
- 2023 **Vicens-Miquel, M.**, P. Tissot, A. Medrano. “Deep Learning Architectures for Short-Term Water Level Predictions” *2023 ASBPA National Coastal Conference*, Providence, RI., August 2023.
- 2023 **Phadke, A.**, F.A. Medrano, T. Chu, C.N. Sekharan, M.J. Starek “D2D (Drone2Drone): a search and rescue framework module for finding lost UAV swarm agents” *The 21st International Conference on Embedded Systems (ESCS23)*, Las Vegas, NV. July 2023.
- 2022 **Vicens-Miquel, M.**, A. Medrano, P. Tissot, H. Kamangir, M. Starek. “Generalized Model for Wet/Dry Shoreline Detection and Total Water Level Elevation Using Deep Learning” *2022 AGU Fall Meeting*. Chicago, IL. December 2022.
- 2022 **Vicens-Miquel, M.**, P. Tissot, A. Medrano. “Deep Learning Architectures to Improve Coastal Water Level Predictions” *2022 ASBPA National Coastal Conference*, Long Beach, CA. September 2022.
- 2022 **Phadke, A.**, F.A. Medrano, S. Ustymenko, T. Chu. “A Study on the Inclusion of Heterogeneous Agents in Unmanned Vehicle Swarms.” *The 20th International Conference on Embedded Systems (ESCS22)*, Las Vegas, NV, July 25-28, 2022.

- 2022 **Vicens Miquel, M.**, F.A. Medrano, P. Tissot, H. Kamangir, M. Starek. “Deep Learning Automatic Detection of The Wet/Dry Shoreline at Fish Pass, Texas.” *2022 International Geoscience and Remote Sensing Symposium (IGARSS 2022)*, Kuala Lumpur, Malaysia, July 17-22, 2022.
- 2022 **Phadke, A.**, F.A. Medrano, T. Chu. “Engineering resiliency in UAV Swarms—A bibliographic analysis.” *2022 International Symposium on Intelligent Unmanned Systems and artificial Intelligence (SIUSA 2022)*, Macao, China, April 22-24, 2022.
- 2022 **Vicens Miquel, M.**, F.A. Medrano, P. Tissot, H. Kamangir, M. Starek. “Deep Learning Generalized Model for Wet/Dry Shoreline Detection” *2022 Texas ASBPA Coastal Symposium*, Corpus Christi, TX. April 2022.
- 2022 **Phadke, A.**, F.A. Medrano, J. Brahmbhatt, S. Ustymenko. “A Framework for an Optimized Smart Energy System.” *2022 International Symposium on Electrical, Electronics and Information Engineering (ISEEIE 2022)*, Chiang Mai, Thailand, February 25-27, 2022.
- 2022 **Vicens Miquel, M.**, F.A. Medrano, P. Tissot, H. Kamangir, M. Starek. “Automated Wet/Dry Shoreline Delineation Using Deep Learning” *AAG Annual Meeting*, San Francisco, CA, February 2022.
- 2022 **F.A. Medrano**. “The Complete Vertex p -Center Problem.” *University of Oklahoma Industrial and Systems Engineering Graduate Seminar*, Norman, OK. February 4, 2022.
- 2022 **Vicens-Miquel, M.**, A. Medrano, P.E. Tissot, M.J. Starek. “Deep Learning Wet/Dry Shoreline Detection Using UAV Imagery” *102nd American Meteorological Society Annual Meeting*, Houston, TX. January 2022.
- 2021 **Phadke, A.**, F.A. Medrano, S. Ustymenko. “Applications of Blockchain in E-government.” *2021 European Conference on Computer Science and Technology (ECCSIT 2021)*, Budapest, Hungary, December 2021.
- 2021 **Phadke, A.**, F.A. Medrano, J. Brahmbhatt. “A Conceptual Framework for a Blockchain-based Tax payment Financial Service.” *2021 International Conference on Computational Science and Computational Intelligence (CSCI 2021)*, Las Vegas, NV. December 15-17, 2021.
- 2021 **Phadke, A.**, F.A. Medrano, S. Ustymenko. “A Review of Vehicular Micro Clouds.” *2021 International Conference on Computational Science and Computational Intelligence (CSCI 2021)*, December 15-17, 2021, Las Vegas, Nevada.
- 2021 **Vicens-Miquel, M.**, A. Medrano, P.E. Tissot, M.J. Starek. “Wet/Dry Shoreline Detection Using Deep Learning” *2021 ASBPA National Coastal Conference*, New Orleans, LA. October 2021.
- 2019 **F.A. Medrano**. “The Complete Vertex p -Center Problem: An Exact Set Covering Method with Brute Force Combinatorics.” *INFORMS Annual Meeting*, Seattle, WA. October 20–23, 2019.
- 2019 **F.A. Medrano**. “The Complete p -Center Problem: A Planning Tool for Urban Location Coverage Optimization.” *International Workshop on Urban Operations Research (IWUOR 2019)*, Nagoya, Japan. July 19–21, 2019.

- 2019 **F.A. Medrano.** “The Complete Vertex p-Center Problem: An Exact Set Covering Method.” *30th European Conference on Operational Research (EURO)*, Dublin, Ireland. June 23–26, 2019.
- 2019 **F.A. Medrano.** “A Set Covering Trade-Off to Solve the Complete Vertex p-Center Problem.” *25th International Conference on Multi-Criteria Decision Making (MCDM)*, Istanbul, Turkey. June 16–21, 2019.
- 2019 **F.A. Medrano.** “Effects of Raster Terrain Representation on GIS Spatial Network Analysis.” *International Network Optimization Conference (INOC)*, Avignon, France. June 12–14, 2019.
- 2019 **F.A. Medrano.** “Brute Force Spatial Optimization: When It’s Okay.” *American Association of Geographers (AAG) Annual Meeting*, Washington DC. April 3–7, 2019.
- 2018 **F.A. Medrano.** “The Complete Vertex p-Center Problem: A Fast Set Covering Method.” *American Association of Geographers (AAG) Annual Meeting*, New Orleans, LA. April 10–14, 2018.
- 2018 **F.A. Medrano.** “GIS Data For Spatial Analysis: What To Avoid At All Costs!”, *Bren School of Environmental Science & Management Seminar*, University of California, Santa Barbara. March 5, 2018.
- 2018 **F.A. Medrano.** “Understanding the Effects of Attribute Scale and Connectivity on GIS Raster Network Analysis.” *Western Regional Science Association Annual Meeting (WRSA)*, Pasadena, CA. February 11–14, 2018.
- 2017 **F.A. Medrano.** “The Complete p-Center Problem: A Fast Set Covering Method.” *64th Annual North American Meetings of the RSAI (NARSC)*, Vancouver, BC. November 8–11, 2017.
- 2017 **F.A. Medrano.** “GIS Data for Spatial Analysis: What to Avoid at All Costs!” *Environmental Studies Department seminar*, Zamorano University, Honduras. March 24, 2017
- 2017 **F.A. Medrano.** “Spatial Analysis.” *GIS course guest lecture*, Zamorano University, Honduras. March 24, 2017
- 2016 **F.A. Medrano.** “The Clarity of Disruption.” *TEDx Santa Barbara*, Santa Barbara, CA. August 20, 2016. (<https://tedxsantabarbara.com/talk/antonio-medrano/>)
- 2016 **F.A. Medrano.** “Attribute Scale on GIS Raster Data: What to Avoid at All Costs!” *ThinkSpatial brownbag seminar at the Center for Spatial Studies*, University of California, Santa Barbara. January 26, 2016.
- 2015 **F.A. Medrano** and R.L. Church. “GIS Raster Data for Multi-Objective Shortest Path Analysis: The Elephant in the Room.” *62nd Annual North American Meetings of the RSAI (NARSC)*, Portland, OR. November 11–14, 2015.
- 2015 **F.A. Medrano** and R.L. Church. “Spatial Data for Multiobjective Shortest Path Analyses: Small Decisions with Large Consequences.” *INFORMS Annual Meeting*, Philadelphia, PA. November 1–4, 2015.
- 2015 **F.A. Medrano.** “Modeling Wicked Spatial Problems: Lessons Learned from my Ph.D. Dissertation.” *Invited talk at the Center for Spatial Studies*, University of California, Santa Barbara, February 18, 2015.

- 2014 **F.A. Medrano**. “Corridor Location: Generating Competitive and Efficient Route Alternatives.” *Ph.D. Defense Presentation*, University of California, Santa Barbara, December 5, 2014.
- 2014 **F.A. Medrano** and R.L. Church. “A Simple Framework for Parallel Multi-Objective Optimization using Java.” *61st Annual North American Meetings of the RSAI (NARSC)*, Bethesda, MD. November 12–15, 2014.
- 2014 **F.A. Medrano** and R.L. Church. “A Simple Framework for Parallel Multi-Objective Optimization using Java” *INFORMS Annual Meeting*, San Francisco, CA. November 9–12, 2014.
- 2014 **F.A. Medrano** and R.L. Church. “A Simple Framework for Parallel Multi-Objective Optimization using JAVA.” *20th Conference of the International Federation of Operational Research Societies (IFORS)*, Barcelona, Spain. July 13–18, 2014.
- 2013 **F.A. Medrano** and R.L. Church. “Fast Generation of Spatially Diverse One-To-One Shortest Path Options.” *60th Annual North American Meetings of the RSAI (NARSC)*, Atlanta, GA. November 13–16, 2013.
- 2013 **F.A. Medrano** and R.L. Church. “Between Terrain and an NP-hard Place: Challenges of Solving Multiobjective Shortest Paths on GIS Networks.” *INFORMS Annual Meeting*, Minneapolis, MN. October 6–9, 2013.
- 2013 **F.A. Medrano** and R.L. Church. “Improved Upper Bounds for a Two-Phase Biobjective Shortest Path Algorithm.” *International Conference on Multi-Criteria Decision Making (MCDM)*, Málaga, Spain. June 16–21, 2013.
- 2013 **F.A. Medrano** and R.L. Church. “Corridor Location for Infrastructure Development: Solving For The Pareto-Frontier Of Solutions.” *Western Regional Science Association Annual Meeting (WRSA)*, Santa Barbara, CA. February 24–27, 2013.
- 2013 **F.A. Medrano** and R.L. Church. “New Methods for Solving the Bi-Objective Shortest Path Problem.” *13th INFORMS Computing Society Conference (ICS)*, Santa Fe, NM. January 6–8, 2013.
- 2012 **F.A. Medrano**. “Gateway to Computationally Efficient Corridor Location.” *Invited Talk at Argonne National Laboratory*, Lemont, IL. November 28, 2013.
- 2012 **F.A. Medrano** and R.L. Church. “A Parallel Algorithm to Solve Near-Shortest Path Problems on Raster Graphs.” *MAT4GIScience 2012 (workshop associated with GIScience 2012)*, Columbus, OH. September 18, 2012.
- 2012 **F.A. Medrano** and R.L. Church. “An Efficient Heuristic for Generating Unsupported Non-Dominated Solutions in a Bi-Objective Shortest Path Problem.” *International Symposium on Location Decisions (ISOLDE XII)*, Nagoya & Kyoto, Japan. July 19–24, 2012.
- 2011 **F.A. Medrano** and R.L. Church. “Modeling Corridor Location Alternatives: New Methods and Future R&D Needs.” *Invited talk at the Department of Energy Headquarters*, Washington DC. November 1, 2011.
- 2010 **F.A. Medrano** and R.L. Church. “Transmission Corridor Location: A Wicked Public Problem.” *Invited talk at Argonne National Laboratory*, Lemont, IL. November 18, 2010.

- 2009 **F.A. Medrano** and R.L. Church. "Differentiated Least Cost Path Selection on Raster Networks." *Colloquium for the Department of Geography*, University of California, Santa Barbara. October 30, 2009.
- 2009 **F.A. Medrano**. "Optical Position Sensors with Applications in Servo Feedback Subwoofer Control." *Masters Defense Presentation*, University of California, Santa Barbara. February 13, 2009.

CONFERENCE ORGANIZATION

- 2019 Program committee, The 2nd AAG Symposium on GeoAI and Deep Learning for Geospatial Research, AAG Annual Meeting, Washington DC, April 2019
- 2015 Spatial Information for Human Health (with M. Castro, M. Duckham and W. Kuhn) Santa Barbara, CA. December 9–11, 2015.
- 2015 Expert Meeting on Spatial Discovery (with D. Stephens and W. Kuhn) Santa Barbara, CA. June 17–18, 2015.

CERTIFICATIONS, AWARDS, AND HONORS

ArcGIS Maps SDK for JavaScript Associate 2024
State of California, Engineer in Training, #EIT115948
California Non-Residential Title 24-2001 Certified Energy Plans Examiner
Tau Beta Pi engineering honor society, Omega chapter, member

PROFESSIONAL SOCIETY MEMBERSHIPS

Association of American Geographers (AAG) – *lifetime member*
- Spatial Analysis and Modeling (SAM)
University Consortium for Geographic Information Science (UCGIS) – *TAMUCC delegate*
Institute for Operations Research and the Management Sciences (INFORMS)
- Section on Location Analysis (SOLA)
- Multiple Criteria Decision Making (MCDM) Section
Regional Science Association International (RSAI)

UNIVERSITY SERVICE & COMMITTEES

- TAMUCC Faculty Senate, Representative (Fall 2021 – Spring 2024)
- CoECS Steering Committee, Member (Fall 2022 – Summer 2025)
- CoECS Library Committee, Member (Fall 2022 – Summer 2025)
- TAMUCC Ad-Hoc Course Evaluation Committee, Member (Fall 2021 – Spring 2022)
- Science & Engr. Research Enhancement Committee, Member (Fall 2020 – Spring 2022)
- Wes Tunnel Distinguished Lecturers Selection Committee (Fall 2019 – Spring 2021)
- Hiring Committee, Department of Computer Science, TAMUCC (2019–2024, various positions)
- Hiring Committee, Conrad Blucher Institute, TAMUCC (2019)

JOURNAL REVIEWER

ACM Transactions on Spatial Algorithms and Systems
Computers, Environment and Urban Systems
Computers & Operations Research
Geographic Information Science & Technology Body of Knowledge
Geographical Analysis
International Journal of Geographic Information Science
Journal of Geographical Systems
MDPI Aerospace
MDPI Drones
MDPI Electronics
MDPI Journal of Marine Science and Engineering
MDPI Remote Sensing
Networks and Spatial Economics
Operations Research for Healthcare
PLOS ONE
Socio-Economic Planning Sciences
The Professional Geographer
Transactions in GIS