Curriculum vitae
March 2023

Tucker Hindle

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EDUCATION

M.S. in Civil Engineering, Florida Atlantic University, Boca Raton, Florida. August 2021.
Thesis: GIS-based hydrologic-hydraulic modeling to predict flood risk at the subwatershed level
Advisors: Fred Bloetscher, PhD, PE and Hongbo Su, PhD, PSM
GPA: 4.0/4.0

B.S. in Geomatics Engineering, Florida Atlantic University, Boca Raton, Florida. May 2020.
Coursework: Land Surveying, Geodesy, Geodetic Positioning, Laser Scanning, Photogrammetry, Remote Sensing, UAS/Drone Mapping, GIS, and Data Science (Python, SQL, MATLAB)
GPA: 3.91/4.00 (*summa cum laude*)

FAA Part 107 Remote Pilot Certificate (sUAS Rating), July 2022.

EXPERIENCE

Research Positions

Florida Atlantic University (FAU), Boca Raton, Florida USA

Research Associate, Department of Civil, Environmental and Geomatics Engineering. January 2023 to Present. Consultant to the Watershed Planning Initiative, leading GIS and hydrologic modeling teams (15 graduate students) in the preparation and presentation of research findings.

Research Assistant, Center for Water Resiliency and Risk Reduction (Fred Bloetscher); Laboratory for Remote Sensing and Hydrometeorology (Hongbo Su). August 2019 to July 2021.

- Integrated GIS with hydrologic-hydraulic modeling for probabilistic prediction of localized flood response to storm events in watersheds across Florida.
- Processed LiDAR-derived topography, modeled groundwater using regression analysis, performed multispectral image classification of impervious surfaces, calculated soil storage, and utilized Arc Hydro for drainage routing and infrastructure in ArcGIS Pro.
- Co-authored two (2) publications in the *Journal of Geoscience and Environment Protection* and the *Journal of Infrastructure, Policy and Development*.

Undergraduate Researcher, Harbor Branch Oceanographic Institute. January 2018 to June 2018. Supervised by Hongbo Su and Tsung-Chow Su.

- Georeferenced historical land surveys and digitized positions of Florida's coastline.
- Calculated change rate statistics using ArcGIS Desktop and the USGS Digital Shoreline Analysis System to analyze movement over time and investigate driving factors.
- Published a peer-reviewed article in the *Florida Atlantic Undergraduate Research Journal*.

Industry Experience

GIS and Field Data Specialist, AECOM, Fort Lauderdale, Florida. July 2021 to March 2022. Areas of expertise: geospatial data science and analytics in ArcGIS Pro/Desktop, Python and R programming, unmanned aircraft systems (UAS) and GPS/GNSS field data collection.

Client	**AECOM Project**
City of Decatur, Georgia	Multispectral Image Classification of Impervious Surfaces
Florida Department of Transportation (FDOT)	District 4 Crash Clustering Analysis
National Aeronautics and Space Administration (NASA)	Kennedy Space Center Per- and Polyfluoroalkyl Substances (PFAS) Monitoring
Naval Facilities Engineering Command (NAVFAC) Southwest	Naval Weapons Station Seal Beach Communications Infrastructure Database
Transmission Developers, Inc.	Champlain Hudson Power Express (CHPE) Renewable Power Transmission Line
Invenergy	New York Harbor Marine/Terrestrial HVDC Power Cable Route Landing Point Assessment
Virginia Department of Rail and Public Transportation (DRPT)	Railroad and I-95 Right-of-Way Delineation
City of Miami Beach, Florida	Star Island 16-inch Force Main Replacement
U.S. Air Force	Tyndall Air Force Base Remedial Investigation
U.S. Navy	Marine Corps Base Camp Pendleton Asset Evaluations

Instructional Experience and Mentoring

Instructor and Research Program Coordinator, Florida Atlantic University Laboratory Schools. March 2022 to Present. Supports department initiatives through teaching, research, and service.

Courses taught at Florida Atlantic University (FAU):

Course #	Title	Times Taught	Students
EDF 2911	Multidisciplinary Research Methods 1	2	28
EDF 2910	Introduction to Research	2	37

* The *Multidisciplinary Research Methods* course series connects undergraduates with faculty researchers, teaches primary literature search and analysis, and mentors students as they write grant proposals, present at conferences, and co-author publications. This unique program is offered to high school students.

GIS Instructor (affiliated with AECOM employment). Designed curriculum and led instruction for the Town of Lake Clarke Shores' utility engineers on effectively leveraging geographic information systems, specifically ESRI ArcGIS Pro, for water and wastewater utilities data.

RESEARCH ACTIVITY

Publications

Bloetscher, F., Rojas, G., Abbate, A., **Hindle, T.**, Huber, J., Jones, R., … Zhang, C. (2021). A framework for a subwatershed-scale screening tool to support development of resiliency solutions and flood protection priority areas in a low-lying coastal community. *Journal of Geoscience and Environment Protection*, 9(10), 180–205. https://doi.org/10.4236/gep.2021.910013

Hindle, T. (2021). Downscaling a GIS-based flood risk screening tool at the watershed, subwatershed, and municipal levels. Master's Thesis, Florida Atlantic University. https://purl.flvc.org/fau/fd/FA00013779

Bloetscher, F., Abbate, A., Huber, J., Liu, W., Meeroff, D., Mitsova, D., … **Hindle, T.** (2021). Establishing a framework of a watershed-wide screening tool to support the development of watershed-based flood protection plans for low-lying coastal communities. *Journal of Infrastructure, Policy and Development*, 5(1), Article ID: 1273. https://doi.org/10.24294/jipd.v5i1.1273

Hindle, T., Su, H., Su, T., & Hindle, T. K. (2019). Mapping historical changes in Florida's coastline from 1875 to 2000. *Florida Atlantic Undergraduate Research Journal*, 8(1), 19–24. https://journals.flvc.org/faurj/article/view/115434

Grants

Title of Research	Funding Agency	PI (Co-PI)	Year	Amount
[1] "Hyperspectral imaging system for remote sensing curriculum and undergraduate research"	FAU Technology Grant, Internal	**Tucker Hindle** (Hongbo Su; Tobin Hindle)	2023	$25,829
[2] "Aerial thermal infrared imaging for earth systems"	FAU Technology Grant, Internal	Tobin Hindle (**Tucker Hindle**)	2023	$15,729

Presentations

Hindle, T., Egger, S., Azad, A., Su, H., Teegavarapu, R., & Bloetscher, F. (2023). Downscaling a GIS-based hydrologic-hydraulic model to predict flood risk at the subwatershed level. *Catastrophe Modeling Conference*. New York City, New York. March 31, 2023.

Meeroff, D., Bloetscher, F., Su, H., Suarez, E., Yong, Y., **Hindle, T.**, & Weaver, J. (2022). Watershed master planning tools to support National Flood Insurance Program and Community Rating System goals for lowering insurance premiums for at-risk communities. *Water Environment Federation Stormwater Summit*. Minneapolis, Minnesota. June 29, 2022.

Hindle, T. (2020). A GIS-based approach to inundation probability modeling in the Caloosahatchee River Basin. *University of Florida/Florida Region – American Society for Photogrammetry and Remote Sensing (ASPRS) LiDAR Workshop*. Virtual. October 22, 2020.

Bloetscher, F., Meeroff, D., Yong, Y., Su, H., **Hindle, T.**, & Oglesby, O. (2020). Watershed Master Planning Initiative and its state/national impact. Presented to the *Florida Division of Emergency Management's Bureau of Mitigation*. February 18, 2020.

Invited Talks and Short Courses/Trainings

Hindle, T. (2023). Analyzing river morphology with Python and Google Earth Engine. Workshop for 26 high school students hosted at Florida Atlantic University. 5 hours, May 17– 19, 2023.

Hindle, T. (Spring 2022, Fall 2022, Spring 2023). Research in geomatics engineering. Guest lecture in *EDF 4932 Exploring Research* undergraduate course at Florida Atlantic University.

Hindle, T. (2023). Watershed Planning Initiative Phase 2 Workshop hosted at the FAU Center for Water Resiliency and Risk Reduction. 5 hours, January 4– 5, 2023.

- LiDAR-derived digital elevation model (DEM) geoprocessing workflow.
- Watershed pathways: Arc Hydro drainage routing and catchment delineation.
- Calculating soil storage capacity for the CASCADE H&H Model.

SERVICE AND INVOLVEMENT

Professional Organizations

IEEE GRSS - Geoscience and Remote Sensing Society, since 2023.

ASPRS - American Society for Photogrammetry and Remote Sensing, since 2018.

- President, ASPRS Florida Atlantic University Student Chapter. 2018–2021.

FSMS - Florida Surveying and Mapping Society, since 2018.

Service

Reviewer for *Florida Atlantic Undergraduate Research Journal* and *FAU Undergraduate Research Grants Program*, since 2022.

Collegiate Athletics

NCAA Division I Florida Atlantic University Cross Country, 2018.

NCAA Division II Lee University Cross Country and Track & Field, 2016–2017.

- 8th ranked program in NCAA Division II (2017).
- 18th place team finish at NCAA Division II National Championships (2016).

HONORS AND AWARDS

Outstanding Academic Program, Palm Beach Illustrated Education Awards, 2022. Florida Atlantic University's High School-Undergraduate Research Program (fauhigh.fau.edu/student-research).

Undergraduate Researcher of the Year - College of Engineering & Computer Science Awardee, Florida Atlantic University's Office of Undergraduate Research and Inquiry, 2019.

Florida Surveying and Mapping Society [Indian River Chapter] Scholarship, 2019.

FAU Kelly Family Foundation Undergraduate Research Fellowship in Coastal Affairs, 2018.

Florida Surveying and Mapping Society [State-Level] Scholarship, 2018.

Florida Surveying and Mapping Society [Palm Beach Chapter] Scholarship, 2018.

Keith and Schnars, P.A. Endowment's Civil and Geomatics Engineering Scholarship, 2018.