Dr. Sudhanshu Sekhar Panda

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GIS (ESRI) Training and Workshops:

Completed Environmental Systems Research Institute (ESRI) sponsored instructor led 2-day workshop Introduction to ArcGIS Server Institute of Environmental Spatial Analysis, Gainesville State College, Gainesville, Georgia, March 29-30, 2010.

Completed ESRI sponsored instructor led 5- Introduction to Programming ArcObjects with VBA ate University, Pocatello, ID, Mar 13-17, 2006.

Completed ESRI sponsored instructor led 2- Introduction to ArcIMS® 9 and Research Center, Idaho State University, Pocatello, Idaho, January 5-6, 2006.

Completed online ESRI workshop courses on Georeferencing Rasters in ArcGIS Working with and 2006.

Completed a one- ArcObjects Programming for Java Developers International Users Conference, San Diego, CA; July 23-28, 2005.

Completed online ESRI workshop courses on Working with Forms, Variables, and Functions in VBA Understanding Branching and Looping in VBA Introductions to Map Production System Atlas Working with CAD Drawings in ArcGIS Introduction to ArcGIS Survey Analyst Working with Survey Data in ArcGIS, Annotation: Tips and Tricks -06.

Completed online ESRI courses on Turning Data into Information Using ArcGIS 9 Geoprocessing with ArcGIS Desktop Learning ArcGIS 9 3D Analyst Learning ArcGIS 9 Spatial Analyst Spatial Analysis of Geohazards Using ArcGIS 9 Learning Arc-IMS 4.0 Customizing Arc-IMS 4.0 Creating, Editing, and Managing Geodatabases for ArcGIS 9 -Visual Basic 6 Creating and Editing Labels and Annotations , 2003-2006.

Completed 3- Introduction to ArcGIS 8 (for ArcView 8, ArcEditor 8, and ArcInfo 8) Center for Advanced Spatial Technologies, University of Arkansas, Fayetteville, May 27-29, 2003.

Other Training and Workshops:

One-day workshop on Trimble Robotics Total Station S7 for field survey application, March 16, 2018. Gas Chromatograph Mass Spectrometer (GCMS) measurement, at Bio-imaging and Sensing Center of NDSU, December 26-27, 2001.

One- Renewable Energy Development and Management Renewable Energy Development Agency (OREDA), India, 1987.

Employment History

1) **Professor, GIS/Environmental Science**; Institute of Environmental Spatial Analysis, University of North Georgia, Gainesville, GA, USA. **[August 2016 Present]**

Responsible for full load teaching of courses related to geospatial technology (GISC), environmental sciences (ESCI), information technology (GISC), and engineering (ENVE); conducting research in the area of geospatial technology based modeling application for broad range of natural resources sustainable management decision support system development in global climate change condition and precision agriculture/site specific crop management (SSCM); along with service learning.

2) **Associate Professor, GIS/Environmental Science**; Institute of Environmental Spatial Analysis, University of North Georgia, Gainesville, GA, USA. **[January 2013 August 2016]**

Responsible for full load teaching of courses related to geospatial technology, environmental sciences, information technology, and engineering; conducting research in the area of geospatial technology based modeling application for natural resources sustainable management decision support system development in global climate change condition; service learning; and coordinating the Information Technology (IT) track of IESA.

3) **Associate Professor, GIS/Environmental Science**; Natural Science, Engineering, and Technology Division, Gainesville State College, Gainesville, GA, USA. **[August 2011 December 2012]**

Responsible for full load teaching courses related to geospatial technology, environmental sciences, information technology, and engineering; conducting research in the area of geospatial technology based modeling application for natural resources sustainable management decision support system

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National Scholarships, Government of India, 1972-1988 (*Throughout my career, starting from standard 3 till the end of my B. S. in Agricultural Engineering.*)

Professional Leadership Activities

<u>Organizing Committee Member</u>, ensuing *2nd ASABE Global Evapotranspiration Symposium* in Nanjing, China, October 25-29, 2020 (*Now Postponed to 2021*)*.*

<u>Co-lead</u>   ee of the ensuing *2nd ASABE Global Evapotranspiration Symposium* in Nanjing, China, October 25-29, 2020 (*Now Postponed to 2021*)*.*

Session Moderator of the **17th Annual Meeting of the American Ecological Engineering Society**, May 23 25, 2017, Athens, GA.

Session Moderator of the **2017 Georgia Water Resources Conference**, April 19 20, 2017, Athens, GA.

<u>Organizing Committee Member</u>, *5th International Conference on Biodiversity-2016* in Madrid, Spain on March 10-12, 2016. http://biodiversity.conferenceseries.com/organizing-committee.php.

<u>Organizing Committee Member</u>, *4th International Conference on Biodiversity-2015* in Las Vegas, NV, USA on June 15-17, 2015. http://biodiversity.conferenceseries.com/organizing-committee.php.

Moderator of the 4th International Conference on Biodiversity, Las Vegas, NV, June 15-17, 2015.

Session chair of two sessions in the 2nd International Conference on Biodiversity and Sustainable Energy Development, Raleigh, NC, August 2013.

<u>Organizing Committee Member</u>, *ASABE April 2014 Symposium on "Evapotranspiration: Challenges in Monitoring and Modeling From a Leaf to the Landscape Scale and Beyond* (http://www.asabe.org/meetings-events/2014/04/2014-evapotranspiration-challenges-in-measurement-and-modeling-from-leaf-to-the-landscape-scale-and-beyond.aspx)

<u>Partner and Certified Trainer</u> for *GLOBE* (http://www.globe.gov/globe_flash.html) program.

<u>Coordinator</u>, Geospatial Training and Analysis Cooperative (GeoSTAC) (http://geology.isu.edu/geostac/)

<u>General Secretary</u>, College of Agriculture Engineering student union, OUAT, India, 1986.

<u>Secretary</u>, Gate City Toastmasters club # 759 (http://759.toastmastersclubs.org/), Fargo, ND, 2001.

<u>Vice President</u>, Membership of Gate City Toastmasters club # 759, Fargo, ND, 2002.

Editorial Activities

<u>Guest Editor</u>   *Remote Sensing of Forest and Wetland Hydrology.*   *To be published on Summer 2021.* https://www.mdpi.com/journal/remotesensing/special_issues/forest_wetland_hydrology

<u>Guest Editor</u>

Affiliations

Member, *Institute of Electrical and Electronics Engineers* (IEEE)
Member, *American Society of Agricultural and Biological Engineering* (ASABE)
Member, American Geophysical Union (AGU)
Member, American Ecological Engineering Society (AEES)
Member, American Consortium for Small Ruminant Parasite Control (ACSRPC)
Member, URISA GA regional chapter (*Urban and Regional Information Systems Association*)
Member, Alpha Epsilon (*Agricultural Engineering Honor Society.*)
Member of several ASABE technical committees (SW-22 and IET-210).
Member of Toastmasters International (http://www.toastmasters.org/) .
Past member of AWRA (*Am Water Res Association*) and Sigma Xi (*The Scientific Research Society*).

Teaching Experience

Taught several geospatial technology, information technology, agricultural engineering, and environmental science courses during my postdoctoral and teaching career since 2004. They are:

Principles of GIS
Advanced GIS
Spatial Analysis
Spatial Modeling
GPS: Field to Research
Water Seminar
Online Introduction to GIS
Application Development in GIS (ArcObjects Programming)
Fundamentals of Soil Science
Hydrology
Landuse & Conservation
Watershed Characterization (Capstone course-Environmental Science Track)
Spatial Analysis for Society and Environment (Capston gh-5(y)11(si)4(s f)-5(o)1ad4 Tf1 0 0 1 447.55 369.860091

S. Panda , T. Windholz)

33. Written and compiled (as coordinating person) > 25 multi-million dollar project proposals for detailed engineering design of highways, railways, port, and dams. Those were submitted to the various govt. and non-govt. organizations in Thailand. 1996-1999. **Four** proposals got funded among them.

Publications & Presentations

Editorials:

1. **Panda, S. S.**, 2013. Editorial for Journal of Biodiversity & Endangered Species, 1:4. http://dx.doi.org/10.4172/jbes.1000e108**.**

Technical Note:

1. **Panda, S.**S. 2021. Development of the reflectance curve for blueberry (to be part of NASA reflectance curve library). Remote Sensing. (*In Preparation to be Submitted for Review*).

Book Chapters:

1. Panda, S.S., Trettin, C., Amatya, D.M., and Kelly, B. 2018. *Tidal Freshwater Forested Wetlands Ecosystems Global Warming Impact Related Management Decision Support with Advanced Geospatial Technology* (Chapter 6.6) in Wetlands Functions, Restoration and Wise Use Book: Springer Publications.
2. **Panda, S.S.**, E. Mason, S. Sen, and H.W. Kim, 2015. *Forest Hydrology Management Decision Support with Geospatial Technology*. Chapter in

rectification and holistic planned grazing preparation. Pages 49-54 in K. T. Weber and K. Davis (Eds.), Final Report: Forecasting Rangeland Condition with GIS in Southeastern Idaho (NNG06GD82G). 189 pp.

18. **Panda, S.S.**, 2010. *Environmental Measures*. Green Society (Green Energy), Ed. P. Robbins, D. Mulvaney, and J. G. Golson. Sage Publications: Los Angeles.
19. **Panda, S.S.**, 2010. *Ethanol, Sugarcane*. Green Society (Green Energy), Ed. P. Robbins, D. Mulvaney, and J. G. Golson. Sage Publications: Los Angeles.
20. **Panda, S.S.**, 2010. *Green Power*. Green Society (Green Energy), Ed. P. Robbins, D. Mulvaney, and J. G. Golson. Sage Publications: Los Angeles.
21. **Panda, S.S.**, 2010. *Non-Point Source*. Green Society (Green Energy), Ed. P. Robbins, D. Mulvaney, and J. G. Golson. Sage Publications: Los Angeles.
22. **Panda, S.S.**, 2010. *Renewable Energy Portfolio*. Green Society (Green Energy), Ed. P. Robbins, D. Mulvaney, and J. G. Golson. Sage Publications: Los Angeles.
23. **Panda, S.S.**, 2010. *Soil Erosion*. Green Society (Green Food), Ed. P. Robbins, D. Mulvaney, and J. G. Golson. Sage Publications: Los Angeles.
24. **Panda, S.S.**, 2010. *Soil Nutrient Cycling*. Green Society (Green Food), Ed. P. Robbins, D. Mulvaney, and J. G. Golson. Sage Publications: Los Angeles.
25. **Panda, S.S.**, 2010. *Carbon Neutral*. Green Society (Green Cities), Ed. P. Robbins, N. Cohen, and J. G. Golson. Sage Publications: Los Angeles.
26. **Panda, S.S.**, 2010. *Landfills*. Green Society (Green Cities),

23. **Panda**, **S. S.,** G. Hoogenboom, and J. Paz, 2009. Distinguishing blued J. Paz, 2009.

Development

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2. Wilcox, W. and **Panda, S. S.** 2021. *Open Source QSWAT Hydrologic Modeling Software Customization for Watershed Characterization Study of Lough Neagh Watershed in Northern Ireland*. Submitted to be presented in the Georgia Water Resources Conference 2021, March 22-23, Athens, GA.

3. **Panda, S. S.**, Gaddis, B., and Winsett, D. 2021. *Automated Flood Potential Geospatial Model Development for Management Decision Support*. Submitted to be presented in the Georgia Water Resources Conference 2021, March 22-23, Athens, GA.

4. **Panda, S. S.** and Perkins, P. 2021. *Geospatial Technology Application for Small Reservoir Design with Environmental-friendly Decision Support*. Submitted to be presented in the Georgia Water Resources Conference 2021, March 22-23, Athens, GA.

5. Winsett, D. and **Panda, S. S.** 2021. *Coastal Island Environmental Management Decision Support through Geo-hydrologic Modeling Approach*. Submitted to be presented in the Georgia Water Resources Conference 2021, March 22-23, Athens, GA.

6. D.M. Amatya, J. Campbell, S. Johnson, K. Elder, N. Lany, D. Kikoyo, **S. Panda**, S. Laseter, J.M. Grace, and A. Walega. *Influence of Precipitation Intensity-Duration-Frequencies on Road Culvert Vulnerabilities at Three USDA Forest Service Long-term Experimental Forests in Varying Ecoregions*. Submitted to be presented in the July 11-14, 2021 ASABE Annual Virtual Meeting.

7. **Panda, S. S.,** Smith, O., Cho, C., Grace, J.M., Amatya, D., and

32. **Panda, S.S**., Terrill, T.H., and Van Wyk, J.A. 2017. *An Automated Cellphone-Based Feedback and Training System for Resource-Poor Farmers for Sustainable Animal Health and Production Management*. Presented in the 26th International Conference of the World Association for the Advancement of Veterinary Parasitology, September 4 8, 2017, Kuala Lumpur, Malaysia.

33. **Panda, S.S**., Miller, C., and Wilson, H. 2017. *Potential Sinkholes Risk Probability Analysis through Automated Geospatial Modeling   A study in Southeast United States*. Presented in the 17th Annual Meeting of the American Ecological Engineering Society, May 23 25, 2017, Athens, GA.

34. Moore, L. and **Panda, S.S**. 2017.

49. Schrader, L. and **Panda, S.S.** 2016. *Linking Incessant Earthquake in Oklahoma to Man-made Causes through Automated Geospatial Model Development*. P

63. **Panda, S.S.**, D. Hohnhorst, and J. Bless, 2013. *Development of Online Estimation Tool for Calculation of Stream Fecal Coliform load from Non-Point and Point Sources*. Presented in the 2nd International Conference on Biodiversity & Sustainable Energy Development, August 1 2- 14, 2013, Raleigh, NC.

64.

80. Burry, K., J. Lipscomb, and **S.S. Panda,** 2010. *Development of automated geospatial model to determine the demise of a small wetland in Flowery Branch*. Georgia Urban and Regional Information Systems Association (GA-URISA), Atlanta, GA. (Awarded first prize in undergraduate category**.)**

81. **Panda, S.S.** and Dalton, K., 2010. *Development of an automated watershed stream health determination model using the 12-point physical watershed parameters*. National Water Conference 2010, February 21-25, 2010, Hilton Head, SC.

82. **Panda, S.S.** 2009. *SQL application in geographic information system*. SQL Saturday Conference, October 10, 2009, Gainesville, Georgia.

83. Taylor, P. and **S.S. Panda,** 2009. *SQL and ArcIMS server development.* SQL Saturday Conference, October 10, 2009, Gainesville, Georgia.

84. Reed, J. and **S.S. Panda,** 2009. *A suitability analysis model for potential blueberry production in Georgia using geospatial technology*. Georgia Academy of Science Conference 2009, Atlanta, GA.

85. Dalton, K. and **S.S. Panda,** 2009*. Dam breaks scenario modeling with HAZUS-MH software*. Georgia Academy of Science Conference 2009, Atlanta, GA.

86. Sean, F. and **S.S. Panda,** 2009. *Geospatial technology usage to analyze environmental and socioeconomic impacts on coastal resources in southwestern Madagascar*. Georgia and Florida Academy of Science Conference 2009, Atlanta, GA.

87. **Panda, S.S.** and R. Randall, 2009. *Geospatial model development for watershed based fecal coliform estimation and comparison with Virginia Tech's bacteria loading calculator*. CSREES National Water Conference, February 8

99. **Panda, S.S.** and S. Panigrahi. 2005. *Learning Vector quantization approach for crop yield estimation zoning with radiometric corrected aerial image textural features*. Presented in the Intermountain GIS -22, Pocatello, ID, USA.

100.   **Panda, S.S.**, J. Tibbitts, and K.T. Weber. 2005. *Advanced GIS application in facilitating telecommunication service at Idaho State University*. Presented in the Intermountain GIS ril 18-22, Pocatello, Idaho, USA.

101. Gammet, B., **S.S. Panda**, and K.T. Weber. 2005. *Mapping of leafy spurge coverage using aerial imagery and GIS techniques.*   -22, Pocatello, Idaho, USA.

102. Chaubey, I., **S.S. Panda,** M. Matlock, and K.L. White. 2005. *Development of a GIS-based decision support system for watershed management.* Presented in the First International Conference on Environmental Science and Technology sponsored by the American Academy of Sciences, January 23-26, 2005, New Orleans, Louisiana, USA

103. **Panda, S.S.**, I. Chaubey, and V. Garg. 2004. *Artificial neural networks application in lake water quality estimation using satellite imagery*. ASAE Paper No. 042073. St. Joseph, MI.

104. Chaubey, I., **S.S. Panda,** K.L. White, M. Matlock, B. Haggard, and T.A. Costello. 2004. *Beaver Lake watershed decision support system*. Presented in the 2004 Annual Conference of the Arkansas Water Resources Center.

105. **Panda, S.S.**, S. Panigrahi, and R. Gautam, 2003. *Learning vector quantization (LVQ) based neural classification for soil nutrient management*. ASAE Paper No. 033066. St. Joseph, MI.

106. S. Panigrahi, R. Gautam, H. Gu, **S.S. Panda**, M. Venugopal, and U Kizil, 2003. *Fluorescence imaging for quality assessment of meat*. ASAE Paper No. RRV03-0025. St. Joseph, MI.

107. **Panda, S.S.**, D. Steele and S. Panigrahi, 2002. *Precision water management using automated crop yield model.* ASAE Paper No. 022251. St. Joseph, MI.

108. **Panda, S.S.**, S. Panigrahi, R. Gautam, and D. Franzen, 2002. *Analysis of clustering techniques for predicting soil NO_3-N from aerial images.* ASAE Paper No. 023090. St. Joseph, MI.

109. Gautam, R.K., S. Panigrahi, **S.S. Panda**, and D. Franzen, 2002. *Petiole nitrate prediction using statistical and neural network approach*. ASAE Paper No. 021043. St. Joseph, MI.

110. **Panda, S.S.** and S. Panigrahi, 2001. *Use of self-organizing map for analysis of remotely sensed aerial images for crop yield prediction*. ASAE Paper No. 013115. St. Joseph, MI.

111. **Panda, S.S.** and S. Panigrahi, 2001. *Analysis of data mining techniques for selected biosystems*. ASAE Paper No. 013049. St. Joseph, MI.

112. **Panda, S.S.**, S. Panigrahi, and N. Derby. 2001. *Crop yield prediction modeling using soil adjusted vegetation index (SAVI)*. ASAE Paper No. SD 01-115. St. Joseph, MI.

113. **Panda, S.S.**, D. Steele, and H. Andrianasolo. 2001. *Watershed based soil conservation measures planning from remote sensing, GIS, and USLE*. ASAE Paper No. SD 01-110. St. Joseph, MI.

114. **Panda, S.S**., H. Andrianasolo, VVN Murty, and K. Nualchawee, 2000. *Planning soil conservation measures on watershed basis with integrating remote sensing, GIS techniques and universal soil loss equreW*nBTl 0 1 12451.62 Tm0 g0 G(103.)]TJETQq0.0000092 0 612 72 ry9TJEn73.9024297 Tm0 g0 . (. A)5(SA)6(l*

Dr. Sudhanshu Sekhar Panda

My Professional Biodata Synopsis:

Dr. Sudhanshu Panda is a professional engineer specializes in soil and water engineering, precision agriculture, site specific crop management, and geospatial technology and its application in sustainable environmental management. He is working as a professor of GIS & Environmental Science in the Institute of Environmental Spatial Analysis at University of North Georgia. He received his PhD in Engineering from the Biosystems & Agricultural Engineering program of North Dakota State University. He earned his M.S. degree in Environmental Remote Sensing for Geoinformation Development from the School of Space Technology Application Research of Asian Institute of Technology. He has his B.S. degree in Agricultural Engineering from Odisha University of Agriculture & Technology. Dr. Panda has the unique experience of working in all three platforms of professional career, i.e., 1) at first as a field engineer (Soil Conservation Engineer) for the Government of Odisha, India, in charge of survey, design, construction supervision, and project evaluation of soil conservation structures such as water harvesting structures, diversion weirs, small earthen embankments, contour bunds, gully control structures, etc., to control erosion, reduce siltation in reservoir, and recharge ground water; 2) in the second phase as a Water Resources Engineer/Remote Sensing & GIS Expert in an Engineering Consulting Company in Bangkok, Thailand, being responsible for multi-million dollars proposal writing and assisting in completion of survey and design of water related structures like bridges and culverts for funded projects on railway lines, ports, and highway interchanges; 3) and lastly as an academic and researcher in the United States, being involved in full load teaching of geospatial technology (geographic information systems, remote sensing, global navigation satellite systems, and information technology), engineering (graphics & design), information technology (foundation of programming and foundation of web design) and environmental science (hydrology, soils, landuse conservation, watershed characterization, environmental spatial analysis, etc.) courses, researching in the fields of bioenergy production, global warming and climate change, water resources/watershed management, precision agriculture, site specific crop management, forest management, animal health management, sustainable biodiversity management with geospatial technology and artificial neural network application. Dr. Panda is a prolific modeler, developing models with ArcGIS ModelBuilder along with in statistics and artificial neural networks platform. He is a software developer with Visual Basics Studio and Python for environmental management decision support system development along with a strong expertise on WebGIS site development. He is an expert in sustainable water resource management decision support system development through his skills of geospatial technology, programming, model development, web design (WebGIS and the Web