

RAKESH MALHOTRA

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EDUCATION

UNIVERSITY OF GEORGIA, Athens, Georgia

Ph.D. in Geography, 1995-2001

Master of Science in Computer Science, 1998-2001

Graduate Certificate in Conservation and Sustainable Development, 1996-1997

Master of Science in Forest Resources, 1992-1995

PUNJAB ENGINEERING COLLEGE / PUNJAB UNIVERSITY, Chandigarh, India

Bachelor of Engineering in Mechanical Engineering, 1987-1991

CERTIFICATIONS/LICENSES

- USGIF GIS and Analysis Tools (CGP-G) 2016
- USGIF Remote Sensing and Imagery Analysis (CGP-R) 2016
- Esri Desktop Certification (Associate) 2010
- Certified Technical Trainer (CTT) 2009
- GIS-Professional (GISP, GIS Institute Certification) 2009
- Certified Mapping Scientist (GIS Certification) 2007
- South Carolina State Board of Registration for Professional Engineers and Land Surveyors (GIS) License 2004
- Esri Certified Instructor 1997-2012

PROFESSIONAL EXPERIENCE

NORTH CAROLINA CENTRAL UNIVERSITY, Durham, North Carolina

2017 – present

Associate Professor, Department of Environmental, Earth and Geospatial Sciences

- Created an accredited certificate program in Geospatial Intelligence (GEOINT)
- Coordinator for the graduate and undergraduate GEOINT certificates at NCCU.
- Teaching Applied Geospatial courses and Introductory Geography courses
- Mentoring graduate and undergraduate students

FAYETTEVILLE STATE UNIVERSITY, Fayetteville, North Carolina

2010 – 2017

Associate Professor, Department of Government and History

- Taught geospatial courses including GIS and remote sensing.
- Developed the accredited GEOINT Undergraduate Certificate / Minor
- Mentored undergraduate students.
- Partnered with local groups such as the City of Fayetteville to create internship opportunities for students.

NORTH CAROLINA CENTRAL UNIVERSITY, Durham, North Carolina

2005 – 2010

Visiting Assistant Professor, Department of Environmental, Earth and Geospatial Sciences

- Established the Geospatial Research, Innovative Teaching and Service (GRTIS) Center.
- Worked with local clients such as the City of Durham to implement geospatial projects with the goal of training students in project management and practical applications in GIS.
- Taught geospatial courses “Geographic Information Systems”, “Remote Sensing of the Environment”, “Principles of Remote Sensing”, “Conservation of Natural Resources”, and “Applied GIS”.
- Wrote grant proposals to funding agencies such as the National Science Foundation and National Geospatial-Intelligence Agency.
- Helped establish a GIS Certificate program for graduate and undergraduate students.

- FUGRO EARTHDATA INC., Frederick, Maryland 2001–2005
Project Manager, Fugro EarthData Solutions
- Managed deliverables, schedules, personnel, and other related issues on client projects.
 - Integrated GIS (ArcGIS, ArcSDE, ArcIMS), databases (SQL Server 2000), and internet technologies to enhance and support project management.
 - Assisted Florida Power and Light with GIS applications in the aftermath of Hurricane Charley.
 - Developed software/utilities in C, C++, and Visual Basic for Applications.
- UNIVERSITY OF GEORGIA, Athens, Georgia 1992 – 2001
Graduate Research Assistant, Graduate Teaching Assistant
- NORTHEAST GEORGIA REGIONAL DEVELOPMENT CENTER, Athens, Georgia 1994 –1995
GIS Technician
- WORLD WILDLIFE FUND, New Delhi, India 1991 – 1992
Education Officer

PUBLICATIONS

- Ansari R. A.; **Malhotra R.**; Buddhiraju K. M., Identifying Informal Settlements using Contourlet Assisted Deep Learning, *Sensors*, Sensors 2020, 20, 2733; doi:10.3390/s20092733
- Ma, Z.–F, Jiang, M, Zhao, Y., **Malhotra R.**, Wong B. Minimum Spanning Tree Co-registration Approaches For Time-Series Sentinel-1 TOPS Data. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. 12(8):3004.
- Malhotra, R.**, Vlahovic, G., Schuckman, K., Robinson, C., Kantor, C., Walton, T., Mulrooney, T., Rineer, J., McGinn, C., and Gruber, C. The Changing Face of Remote Sensing: Harnessing Innovation to Enable New Applications. 2019 *The State and Future of GEOINT Report*. 60-62 USGIF.
- Tian, X, Jiang, M, Xiao, R, **Malhotra R.** 2018. Bias Removal for Goldstein Filtering Power Using a Second Kind Statistical Coherence Estimator. *Remote Sensing* 10(10):1559; doi:10.3390/rs10101559
- Tian, X., **Malhotra, R.**, Xu, B., Qi, H. and Ma, Y. 2018. Modeling Orbital Error in InSAR Interferogram Using Frequency and Spatial Domain Based Methods. *Remote Sensing Special Issue "Advances in SAR: Sensors, Methodologies, and Applications"* 10(4), 508; doi:10.3390/rs10040508
- Malhotra, R.**, Kantor, C., Vlahovic, G. 2018. “Geospatial Intelligence Workforce Development in a Changing World – An HBCU Focus” *Southeastern Geographer* 58(1):125-135.
- Jiang, M., Yong, B., Tian, X., **Malhotra, R.**, Hub, R., Li, Z., Yu, Z., Zhang, X. 2017. “The potential of more accurate InSAR covariance matrix estimation for land cover mapping” *ISPRS Journal of Photogrammetry and Remote Sensing* 126:120-128.
- Malhotra, R.** 2015. “The Role of Online Services in Teaching Geospatial Intelligence (GEOINT)”, *27th International Cartographic Conference and 16th General Assembly*, Rio de Janeiro, Brazil, August 23-28, 2015. ISBN 978-85-88783-11-9.
- Jiang, M., Ding, X., Hanssen, R.F., **Malhotra, R.**, Chang, L. 2015. “Fast Statistically Homogeneous Pixel Selection for Covariance Matrix Estimation for Multitemporal InSAR”, *IEEE Transactions on Geoscience and Remote Sensing* Vol 53, No. 3:1213-1224.
- Jiang, M., Ding, X., Tian, X., **Malhotra, R.**, and Kong, W. 2014. “A hybrid method for optimization of the adaptive Goldstein filter”, *ISPRS Journal of Photogrammetry and Remote Sensing* 98:29-43.
- Malhotra, R.** and Tomlinson, L. 2014. “Strangers on a Train”, *Southeastern Geographer* 54(1):1-3.
- Czejdó, B. D., Bhattacharya, S., and **Malhotra, R.** 2013. “Interactions of Dynamic Geospatial Objects with Static Landmarks”, *Journal TTS (Technika Transportu Szynowego)* Num.10 :(2255-2264).
- Malhotra, R.**, Virk, G., Nwoko, F., Klepper, A. 2013. “Web-based Geospatial Technology tools for Metropolitan Planning Organizations”, *Southeastern Geographer*, 53(3):296-309.
- Vlahovic, G. and **Malhotra, R.** 2011. The Esri Site License Program: Enhancing Geospatial Education at North Carolina Central University. *The North Carolina Geographer* (18):53-60.

- Malhotra, R.** and Vlahovic, G. 2011. "GIS Educational Opportunities at Historically Black Colleges and Universities in the United States." *Southeastern Geographer*, 51(3): 443-456.
- Vlahovic, G and **Malhotra, R.** 2010 "Geospatial Education at North Carolina Central University – an HBCU Perspective." *Southeastern Geographer*, 50(2): 258–271.
- Malhotra, R.**, Vlahovic, G., Madden, M., Tilley, K., and Renslow, M. "The Role of Geospatial Associations in Promoting the Profession to Young People". *Proceedings of the ISPRS Mid-Term Symposium Commission VI 'Cross-Border Education for Global Geo-information'*, Enschede, The Netherlands, June 2-4, 2010.
- Malhotra, R.** and Vlahovic, G. "ASPRS Provisional Certificate Program – A Student Focused Opportunity." *Photogrammetric Engineering and Remote Sensing*, August 2009, p. 927-930.

GRANTS & AWARDS

NORTH CAROLINA CENTRAL UNIVERSITY, Durham, North Carolina

- **National Science Foundation.** (Co-Principal Investigator): GEOPATHS-IMPACT: Growing Geoscience Enrolment Through Academic Partnership with NC Community Colleges (GGETAP with NCCC) – 2019 (351,944)
- **University of North Carolina at Chapel Hill.** (Principal Investigator) Triangle Institute for Security Studies Intelligence Community Center of Academic Excellence in Intelligence and Security Studies – 2019 (\$54,273)
- **Geodynamics** (Principal Investigator): USACE Civil Works Land Data Migration (CWLDM) Real Estate Mapping / Database Project for Jordan & Falls Lake, NC – 2018 (85,000)
- **National Geospatial Intelligence Agency** (Co-Principal Investigator): Talent Pipeline - Increasing Diversity and Enhancing Geospatial Programs – 2013 (\$307,363)

FAYETTEVILLE STATE UNIVERSITY, Fayetteville, North Carolina

- **BAE Systems** (Co-Principal Investigator): Review of Open Source database options and comparison with Oracle implementations with the Esri platform – 2017 (\$17,438)
- **Research Triangle Institute** (Principal Investigator): Remote Sensing, Image Processing, UAVs and Geospatial Data Applications: Innovative Research on Bringing New Tools and Data to Improve the Human Condition – 2016 (\$49,688)
- **UNC-General Administration** (Principal Investigator): Peace, Technology, and Social Media – 2014 (\$6,000)
- **National Geospatial Intelligence Agency** (Sub-Agreement with NCCU) (Principal Investigator): Talent Pipeline - Increasing Diversity and Enhancing Geospatial Programs – 2013 (\$307,363)
- **National Geospatial Intelligence Agency** (Principal Investigator): Developing the Geospatial Intelligence Certificate at Fayetteville State University – 2012 (\$443,000)
- **Housing and Urban Development** (Sub-Agreement with NCCU) (Principal Investigator): Building Minority Ownership Project – 2011 (\$35,000)

NORTH CAROLINA CENTRAL UNIVERSITY, Durham, North Carolina

- **National Science Foundation** (Co-Principal Investigator): Pathway to Success – Research and Internship Opportunities for Students – 2008 (\$150,072)
- **National Science Foundation** (Co-Principal Investigator): "Integrative Geophysical Investigation of the New Madrid Seismic Zone: Collaborative research NCCU and CERF", research project under Centers for Research and Excellence in Science and Technology (CREST): Computational Center for Fundamental and Applied Science and Education at NCCU – 2008 (\$736,214)
- **National Geospatial-Intelligence Agency** (Co-Principal Investigator): Geospatial Research and Internship Partnerships – 2008 (\$139,911)
- **ASPRS:** Presidential Citation for pioneering the concept of Provisional Certification – 2007
- **NCCU:** Teaching and Learning with Technology Grants – 2006 (\$3000)
- **National Science Foundation** (Co-Principal Investigator): Targeted Infusion Grant: Development of a GIS Certification Program and Preparing for GIS Accreditation at North Carolina Central University – 2006 (\$236,910)

- **National Science Foundation** (Co-Principal Investigator): Launching the GIS Research Innovative Teaching and Service (GRITS) Center at the North Carolina Central University – 2006 (\$129,608)

EXTERNAL ACTIVITIES

- Student Volunteer Coordinator for the **American Society for Photogrammetry and Remote Sensing** (ASPRS)
- Board Member for the **Cartography and Geographic Information Society** (CaGIS)
- Member of the Academic Advisory Board and Editorial Review Board for the **United States Geospatial Intelligence Foundation** (USGIF)
- Editorial Board of the **Southeastern Geographer** (SEDAAG)
- Program Evaluator for Universidade NOVA de Lisboa and James Madison University for the **United States Geospatial Intelligence Foundation** certificate accreditation programs