Application for Hosting Technical Commission V (Education and Outreach) 2016-2020

Name of Ordinary Member making the application:
Chinese Taipei Society of Photogrammetry and Remote Sensing (CTSPRS)

Name of the proposed Technical Commission President (TCP) and Vice-President:
TCP: Dr. Fuan Tsai
VP: Dr. Rakesh Malhotra (supported by the American Society for Photogrammetry and Remote Sensing)

Provisional plan for financial and management arrangements:
The financial and management is planned to be arranged mainly by CTSPRS and with support from National Central University of Taiwan.
Joint meeting travel cost: $3,300/year; Mid-term Symposium 2018: $30,000.

Provisional plan for technical meetings:
• The mid-term symposium is planned to be organized jointly with an appropriate international conference or with the annual Surveying and Geoinformatics Conference of Taiwan in 2018. The venue is planned to be at National Central University, Zhongli, Taoyuan, Taiwan.
• Each working group is encouraged to organize at least one workshop or symposium during the four years period.
• Continue to support ISPRS Student Consortium Summer School.

Application endorsed by

Prof. Peter Tian-Yuan Shih
President, Chinese Taipei Society of Photogrammetry and Remote Sensing
First submission: March 13, 2016
This submission: April 27, 2016
April 13, 2016

Professor Chen Jun, President
International Society for Photogrammetry and Remote Sensing (ISPRS)
Via email: chenjun@nsdi.gov.cn, chenjun_isprs@263.net, isprs-sg@ipi.uni-hannover.de

Dear Professor Chen,

This letter is submitted in support of the nomination of Dr. Rakesh Malhotra, Fayetteville State University, North Carolina, USA, for Vice-President of Commission V (Education and Outreach) for the 2016-2020 term. Dr. Malhotra will partner with Dr. Fuan Tsai, who has been nominated by the Chinese Taipei Society of Photogrammetry and Remote Sensing (CTSPRS) as a candidate for Commission-V President, to contribute to the education, outreach and promotion of photogrammetry, remote sensing and spatial information sciences. Dr. Malhotra has been an active member of ASPRS since 2005 and has contributed to ISPRS and ASPRS as highlighted:

- Organized the 2010 ISPRS Student Consortium Summer School in Fayetteville, NC in Summer 2010. This event was attended by about 60 students from over 19 countries from around the world.
- Served as the Co-Chair of ISPRS Working Group VI/5 from 2012-2016. In this capacity, he helped the Chair (Dr. Fuan Tsai) and participated in meetings with the Student Consortium.
- Served as the student volunteer coordinator for ASPRS since 2008. In this capacity he organizes and manages students who attend and participate in the ASPRS annual conferences. Students contribute to conference management while receiving complimentary registration for the event.

Rakesh Malhotra is an Assistant Professor of Geography and the coordinator for the Geography Program at FSU. He established a GIS/remote sensing lab with external funding which was recently designated as the USGS/NGA Center for Academic Excellence. He is an excellent candidate who has worked on student and education related issues within and outside ASPRS and ISPRS for over 10 years. His CV is included along with this letter.

Please let me know if you need additional information to support Dr. Malhotra’s nomination.

Sincerely,

Michael Hauck
Executive Director

cc (via email):
Dr. Charles Toth, ASPRS President
ASPRS Board of Directors
ISPRS Council

5410 Grosvenor Lane, Suite 210, Bethesda, MD 20814 * 301-493-0290 * www.asprs.org
Academic Curriculum Vitae

Fuan Tsai
Professor
Center for Space and Remote Sensing Research
National Central University
Zhong-Li, Taoyuan 320, Taiwan ROC
Tel: + 886-3-4227151-ext.7619
Fax: + 886-3-4254908
E-mail : ftsai@csrsr.ncu.edu.tw

Education:
B.S. (1989): Civil Engineering, National Taiwan University, Taipei, Taiwan.

Experiences:
08/2014 – present:   Professor, Center for Space and Remote Sensing Research, National Central University, Taiwan
08/2012 – present:   Chair, Working Group VI-5 of the International Society for Photogrammetry and Remote Sensing (ISPRS WG-VI/5)
08/2007 – 07/2014: Associate Professor, Center for Space and Remote Sensing Research, National Central University, Taiwan
08/2002 – 07/2007: Assistant Professor, Center for Space and Remote Sensing Research, National Central University, Taiwan
07/2000 – 07/2002: Postdoctoral Research Associate, Los Alamos National Laboratory, Los Alamos, NM, USA
01/1997 – 10/1998: Graduate Research Assistant, Los Alamos National Laboratory, Los Alamos, NM, USA
10/1993 – 12/1996: Research Assistant, Cornell University, Ithaca, NY USA

Areas of Interest and Specialization:
Remote Sensing Image Analysis; 3D Reconstruction; Multi-dimensional Spatial Analysis; Digital City Modeling; Geovisualization

Awards:
Excellent Young Scholar Research Grant Award, National Science Council, 2007—2010.
Excellence in Teaching Award: College of Engineering, National Central University, 2006.
Student Paper Awards:
- 32nd Taiwan Surveying and Geoinformatics Conference, 2013.
- 28th Taiwan Surveying and Geoinformatics Conference, 2009.

Professional Societies:
- Chinese (Taipei) Society of Photogrammetry and Remote Sensing
- IEEE Geosciences and Remote Sensing
- SPIE
- American Geophysical Union

Activities (2011-):
- Chair, ISPRS WG-VI/5, 2012-2016.
- Advisor, AARS Student Group, 2014-present.
- Executive Guest Editor: Terrestrial, Atmospheric and Oceanic Sciences (TAO), 2015.
- Organizer: 13th SPRS Student Consortium and WG VI/5 Summer School, Diliman, Quezon City, Philippines, Oct. 2015.
- Organizer: 11th ISPRS Student Consortium and WG VI/5 Summer School, Nay Pyi Taw, Myanmar, Oct. 2014.
- Keynote: Annual Conference of Architecture and Building Research Institute, MOI, Taipei, Taiwan, May 2014.
- Keynote: Smart Cadastre and Smart City Workshop, Kaohsiung, Taiwan, Dec. 2013.
- Organizer: 8th ISPRS Student Consortium and WG VI/5 Summer School,
Selected Publications:

Refereed Papers:

Tsai*, F., J-S Lai and Y-H Lu, 2016. "Land-Cover Classification of Full-Waveform LiDAR Point Cloud with Volumetric Texture Measures", Terrestrial, Atmospheric and Oceanic Sciences, accepted. (SCI)


Wang, C-L, Y-S Chiou* and F. Tsai, 2013, "Reduced-complexity tracking scheme based on adaptive weighting for location estimation", IET Communications, vol. 7 no. 7, pp. 673-684. (SCI)


Tsai, F., Y-S Chiou* and H. Chang, 2013, "A Positioning Scheme Combining

Conference and Other Papers:


(ISRS2014), 16-18 Apr., Busan, Korea.


2013 (MMT2013), May. 1-3, Tainan, Taiwan.

鄭哲儇、蔡富安*，2013，"資料探勘技術預測豪雨促發之崩塌事件"，第六屆海峽兩岸遙測/遙感研討會(RSATS2013)，Mar. 18-22, 2013, 桃園，台灣。

（最佳學生論文獎）

張桓、蔡富安*，2013，"電腦視覺式相機路徑估測與可行性評估"，第六屆海峽兩岸遙測/遙感研討會(RSATS2013)，Mar. 18-22, 2013, 桃園，台灣。


張桓、蔡富安*, 2009, "以單張影像重建三維建物模型", 第28屆測量及空間資訊研討會(SG2009), Aug. 27-28, 2009, 中壢。（Best Student Paper Award）

賴哲儇、蔡富安*, 2009, "高光譜影像立方體於特徵空間之三維紋理計算", 第28屆測量及空間資訊研討會(SG2009), Aug. 27-28, 2009, 中壢。（Best Student Paper Award）


Tsai*, F., Y.-H. Lian, K.-H. Hsiao, 2005, "Combining Level-of-Details on Terrain


饒見有*, 張智安, 蔡富安, 陳良健, 蕭國鑫, 徐偉誠, 2005, "三維虛擬城市模型之製作", 第二十四屆測量學術及應用研討會論文集, pp.1057-1064, 台北。


饒見有*, 張智安, 蔡富安, 陳良健, 蕭國鑫, 徐偉誠, 2005, "建構三維城市模型之研究", 第三屆數位地球國際研討會論文集, pp. 389-400, 台北。

饒見有、張智安、蔡富安、陳良健、蕭國鑫、徐偉誠，2005, "像真城市模型之建構與淹水視覺模擬應用”，電子計算機與土木水利工程應用研討會，台南。


Tsai*, F., M. Laba, and D. O’gurcak, 2003, "Hyperspectral Data Analysis for Identifying Invasive Plants", 二十二屆測量學術研討會，桃園。


Patents:

Method of Location Estimation and Tracking Using Distributed Message Passing of Heterogeneous Observation Data Accompanied with Low-Complexity Data-Fusion Scheme (ROC: I 444073; & US: 9,147,165 B2)

A Method and System for Generating Photo-realistic Digital City Models (ROC: 084115908)
RAKESH MALHOTRA  
107 Little Branch Trail, Chapel Hill, NC 27517  
Phone: 919-638-3397 ~ Email: rakesh.malhotra@gmail.com

EDUCATION

UNIVERSITY OF GEORGIA, Athens, Georgia  
Ph.D. in Geography, 1995-2001  
Master of Science in Computer Science, 1998-2001  
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

- Esri Certified Instructor 1997-2012  
- South Carolina State Board of Registration for Professional Engineers and Land Surveyors (GIS) License 2004  
- Certified Mapping Scientist (GIS Certification) 2007  
- GIS-Professional (GISP, GIS Institute Certification) 2009-2014  
- Certified Technical Trainer (CTT) 2009  
- Esri Desktop Certification (Associate) 2010

PROFESSIONAL EXPERIENCE

FAYETTEVILLE STATE UNIVERSITY, Fayetteville, North Carolina  
Assistant Professor, Department of Government and History, 2010 – present  
- Teach geospatial courses such as GIS and remote sensing.  
- Developed the accredited GEOINT Undergraduate Certificate / Minor  
- Mentor undergraduate students.  
- Partner with local groups such as the City of Fayetteville, and Sustainable Sandhills to create GIS content and internship opportunities for students.

CITY OF DURHAM, Durham, NC  
GIS Project Manager (part time), 2010 – present  
- Work with developers and GIS users to guide GIS related projects such as the TELUDE (Transportation Environmnet Land Use Data Enterprise) geospatial data warehouse that was developed using Esri technology (ArcGIS Server), SQL Server, and FLEX API.  
- Create project reports and publications on geospatial projects.

NORTH CAROLINA CENTRAL UNIVERSITY, Durham, North Carolina  
Visiting Assistant Professor, Department of Environmental, Earth and Geospatial Sciences, 2005 – 2010  
- 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.  
- 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  
Project Manager, Fugro EarthData Solutions, 2001–2005  
- 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.
Rakesh Malhotra

PROFESSIONAL EXPERIENCE (Continued)

- Assisted Florida Power and Light with GIS applications in the aftermath of Hurricane Charley.
- Provided GIS support to the Airborne Rapid Imaging for Emergency Support (ARIES) program.
- Developed software/utilities in C, C++, and Visual Basic for Applications.

University of Georgia, Athens, Georgia
Graduate Research Assistant, Graduate Teaching Assistant, Department of Geography
Manager Training, Sustainable Human Ecosystem Laboratory, Department of Anthropology
Tutor, Athletic Association

Northeast Georgia Regional Development Center, Athens, Georgia
GIS Technician

World Wildlife Fund, New Delhi, India
Education Officer

RECENT PUBLICATIONS


RECENT GRANTS & AWARDS

Fayetteville State University, Fayetteville, North Carolina
- **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 CERI”, 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)