Pu, Ruiliang

Current office:

Associate Professor
School of Geosciences
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EDUCATION

2000   Ph.D., Cartography & Geographic Information System, conducted at College of Natural Resources (CNR), UC Berkeley, and Chinese Academy of Sciences, China
Dissertation: An exploratory analysis on *in situ* hyperspectral data of conifer species

1985   M.Sc., Forest Management, Remote Sensing in Forestry, conducted at Nanjing Forestry University (NFU), Nanjing, China.
Thesis: Application of remote sensing techniques in forest environment modeling.

1982   B.Sc., Forestry, NFU, Nanjing, China.
Essay: Aerial photo interpretation for bamboo resource inventory.

ACADEMIC AND PROFESSIONAL INTERESTS

Remote Sensing Image Analysis and Application

- Multi-platform remote sensing analysis in biogeography
- Wildland fire hotspot detection and burn scar mapping
- Retrieval of land surface temperature (LST) from thermal sensors
- Imaging spectrometer data analysis to surface process modeling
- Urban ecological analysis
- Seagrass mapping and characterization
- Environmental modeling
- Land use/cover change detection
- Invasive species mapping and monitoring
- Forestland classification and evaluation

Geographic Information System Analysis and Application

- Landscape dynamic planning and evaluating
- Environmental resources management
- Land systems classification
- Natural resources evaluation and monitoring
- Watershed planning and modeling

Quantitative Analysis and Modeling Technologies

- Multivariate and spatial statistical analysis methods
- Geospatial modeling approaches
- Quantitative analysis methods and application

- Neural network analysis in environmental science
- Remote sensing image processing and analysis
- Computer programming in C(VC, C++)/FORTRAN

Major Analysis Softwares

- Advanced PCI Geomatica, ERDAS Imagine, & ENVI image analysis systems
- ESRI ArcGIS analysis softwares
- SAS/Matlab/SPSS/Splus statistical analysis softwares

EXPERIENCES

Teaching

2012-   Associate Professor, School of Geosciences, University of South Florida

2006 -2012   Assistant Professor, Department of Geography, University of South Florida, courses:
- Remote Sensing of the Environment at introductory level
- Advanced Remote Sensing at graduate level
- Research Methods in Geography at undergraduate level
- Readings in Remote Sensing at graduate level
- Environmental Applications of GIS at graduate level

1995-2006   Research Associate, Assistant Research Professor, College of Natural Resources (CNR), The University of California at Berkeley, California, U.S.A.
Courses, seminar and training:
- ESPM 290: GIS/ remote sensing in public health for undergraduate students
- ESPM 298: Advanced remote sensing in natural resources for graduate students
- Hyperspectral remote sensing and its application for graduate students
- Atmospheric correction to satellite imagery for graduate/under graduate students.
- PCI Geomatica, ArcGIS trained to CAMFER's visitors and workers
- Major GPS equipment and spectroradiometer trained to CAMFER's visitors and workers
- Guest lectures: Hyperspectral remote sensing in Nanjing University and Beijing Normal University, China, 30 hours each, in 1999 and 2001 respectively, for graduate students and young scholars.

1993-1994   Associate Professor, Department of Forestry, NFU, Nanjing, China
Courses:
- Remote sensing image processing for graduate students
- Remote sensing in natural resources for graduate and undergraduate students
- Forest resources management for undergraduate students

1985-1992   Assistant Professor, Department of Forestry, NFU, Nanjing, China
Courses:
- Remote sensing in natural resources for undergraduate students
- Forest resources management for undergraduate students

Research

2006-   Assistant Professor, Associate Professor, School of Geosciences, University of South Florida.

- Co-PI/Science-PI: Mapping and Characterization of Seagrass Habitats Using Spacecraft Observations
- Co-PI: City of Tampa Urban Ecological Analysis and Management Plan 2010-2012
- PI: Land surface temperature retrieval study with thermal satellite imagery
- PI: Hyperspectral and High Spatial Resolution Data Analysis for mapping Tree Canopy
- Co-PI: City of Tampa Urban Ecological Analysis
- PI: Development of Fire Algorithm with GOES-R ABI Simulated Data
- PI: Urban environmental studies using thermal and optical remote sensing data
- PI: invasive species detection and evaluation in a terrestrial ecosystem using hyperspectral data

2005-2006   Visiting Research Scientist, Earth System Science Interdisciplinary Center, University of Maryland, College Park
- Investigator: biomass burning detection and mapping in North American using NOAA/AVHRR and Terra/MODIS data.
- Investigator: Thresholds of vegetation change following N deposition in southern California ecosystems

1995-2005   Research Associate, Assistant Research professor, CNR, UC Berkeley
- Co-PI: Land surface temperature retrieved from thermal remote sensing images (Landsat/TM/ETM+6, NOAA/AVHRR4&5, Terra/ASTER 13&14 and ITRES/TABI-320) and urban environment studies (e.g., urban heat island phenomenon)
- Co-PI: NASA EO-1 project, verifying EO-1 data (ALI, Hyperion, LAC) for extracting biophysical and biochemical parameters
- Investigator: Monitoring of Sudden Oak Death using CASI hyperspectral data; invasive species mapping using CASI data
- Co-PI: Mapping of historical burn scars (1989 - 2000) of the North America with NOAA/AVHRR data.
- Investigator: Emission estimation in California through wildland fire hotspot detection and burnt scar mapping with NOAA/AVHRR daily data using PCI EASI scripts and modeling
- PI: Tree species identification and biochemistry estimation with *in situ* hyperspectral data using artificial neural networks and spectral derivative techniques
- PI: Irrigate tracts classification and evaluation with Landsat TM imagery and GIS tool
- PI: Land ecosystems classification with DEM, forestry data using artificial neural networks
- Co-PI: Wildlife habitat classification with TM data and using maximum likelihood classifier and artificial neural networks as well as GIS tool

1994-1995   Visiting Research Scientist, Department of Geomatics Engineering, The University of Calgary, Canada.
- Co-PI: Evaluate the potentials of hyperspectral imagery (CASI and AVIRIS)

for estimating forest canopy biochemistry and other ecosystem parameters, such as LAI and crown closure.

1992-1994   Associate Professor, Remote Sensing Laboratory, NFU, Nanjing, China
- Co-PI: Exploring and modeling the relationships between vegetation change and environmental elements
- PI: Assessment of forest landscape types for national parks using remote sensing techniques

1990-1992   Visiting Research Scientist, Earth-Observations Laboratory, ISTS, North York, Ontario, Canada.
- Investigator: The Oregon Transect Ecosystem Research project, led by NASA,USA, Analyzing the relationships between hyperspectral image (CASI and AVIRIS) and ecosystem parameters
- Participate: Imaging spectrometry data calibration

1985-1990   Assistant Professor, Remote Sensing Laboratory, NFU, Nanjing, China
- Project leader and PI: Application of remote sensing techniques in protected forest inventory in the coastal zone in China
- Co-PI: Remote sensing image analysis and application in forest resources
- Investigator: Application of remote sensing techniques in forest resources analysis in southern china.

Thesis/dissertation Advisor
2006-

Graduated master thesis:
Cynthia Meyer, master thesis committee director (Fall 2008)
Bruce Mitchell, master thesis committee co-director (Summer 2011)
Fenqing Weng, master thesis committee director (Summer 2012)
James Anderson, master thesis committee member (Summer 2012)
Corey Denninger, master thesis committee member (non- thesis track, Fall 2012)
Elizabeth Ciesla, master thesis committee member (non- thesis track, Fall 2013)

Graduated PhD dissertation:
JoAnn Sullivan, doctoral dissertation committee member (Summer 2010)
Shawn Landry, doctoral dissertation committee member (Summer 2013)
Cynthia Meyer, doctoral dissertation committee director (Fall 2013)
Sandra Kling, doctoral dissertation committee member (Spring 2014)

Current master thesis:
Kathleen Farr, master thesis committee director
Lisa Beyer, master thesis committee director
Amor Elder, master thesis committee director
Steven Ulloa, master thesis committee member

Current PhD dissertation:
George Kish, doctoral dissertation committee director
Julius Anchang, doctoral dissertation committee co-director
Julie Earls, doctoral dissertation committee director
René Dieter Baumstark, doctoral dissertation committee director

Qiuyan Yu. doctoral dissertation committee director
Qianqing Dong, doctoral dissertation committee director
Jun Cheng, doctoral dissertation committee member
Milena Janiec Grygo, doctoral dissertation committee member
Bruce Mitchell, doctoral dissertation committee member

Services

1997-   Referee for reviewing following journals
- Ecological Modelling (USA).   2008-
- IEEE Geoscience and Remote Sensing Letters (USA).   2008-
- IEEE Journal of Selected Topics in Earth Observations and Remote Sensing (USA).   2008-
- Journal of Applied Remote sensing (USA).   2008-
- Computers and Electronics in Agriculture   2007-
- ISPRS Journal of Photogrammetry and Remote Sensing   2007-
- Canadian Journal of Remote Sensing (Canada)   2007-
- Environmental Monitoring and Assessment (Netherlands)   2006-
- Remote Sensing of Environment (USA)   2004-
- IEEE Transactions on Geoscience & Remote Sensing (USA) 2003-
- Photogrammetric Engineering & Remote Sensing (USA)   2002-
- Forest Science (USA)   2002-
- International Journal of Remote Sensing (UK)   1999-
- International Journal of Digital Earth (China)   2008-
- International Journal of Wildland Fire (Australia)   2008-
- The Professional Geographer (USA)   2009-
- Annals of the Association of American Geographers (USA)   2010-
- Journal of Earth Science and Engineering (JESE, USA).   2013-
- Crop Science (USA)   2013-
- Environmental Management (USA)   2013-

1995 -2004   **assistant editor** (Editor-in-Chief : Dr. Peng Gong), *Geographic Information Sciences* (renamed to *Annals of GIS*), The Association of Chinese Professional in Geographic Information Systems (Abroad).

GUEST POSITIONS

2004-   • Research Professor, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, Changchun, China.
2002-   • Research Professor, Institute of Natural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, Beijing, China.
2001-   • Adjunct Professor, College of Forest Resources and Environment, Nanjing Forestry University, Nanjing, China.

RESEARCH GRANTS
(Participation or independent applications)

• R. Pu   National Natural Science Foundation of China   Held $55,000   1988-89

Application of Remote Sensing to Shelter Forest in Coastal zone of China

- P. Gong   Forestry Canada, Research Contract   Held $23,000 cdn   1993-95
  R. Pu   Land systems Classification

- P. Gong   University of California Start-up Grant   Held $400,000   1993-94
  R. Pu   Forest yield prediction with an artificial neural network

- P. Gong   University of California DNAR Special Grant   Held $25,000   1994-95
  and   G. Biging
  R. Pu   Hyperspectral data analysis for conifer species recognition

- P. Gong   USDA AES Grant   Held $30,000/yr.   1994-98
  R. Pu   Integrated analysis for multisource spatial data analysis for ecological studies

- P. Gong   IHRMP Grant   Held $165,000   1995-99
  and G. Biging
  R. Pu   Hardwood monitoring using an airborne digital Camera integrated with a
  low-cost positioning/attitude reference system (will participate this project from this year)

- P. Gong   California Air Resource Board   Held $164,000   2000-01
  R. Pu   Emission estimation through wildland fire hotspot detection and burnt scar mapping with
  NOAA/AVHRR data

- P. Gong   NASA EO-1 Validation Grant   Held $210,000   2001-03
  and G. Biging
  R. Pu   EO-1 satellite sensors: ALI, LAC and Hyperion image data validation for extracting
  Biophysical and biochemistry parameters such as LAI, CC and species identification

- P. Gong   NASA North America Historical Fire Mapping   Held $300,000   2000-03
  R. Pu   Historical burn scar mapping of 1985-2000 for the North American with NOAA/AVHRR data

- P. Gong   USDA Agricultural research service   Held $258,125   2002-05
  R. Pu   Aerial Image Analysis GIS Assessment of Weed Biological Control Efforts

- P. Gong   PASCO Corporation, Japan   Held $55,000   2004-05
  R. Pu   Land surface temperature retrieved from thermal remote sensing images

- P. Gong   NSF, USA   Held $220,000   2005-10
  R. Pu   Thresholds of vegetation change following N deposition in southern California ecosystems

After moving to USF:
- R. Pu   NOAA-UMD, USA   Held $20,000   2007-09
  Development of Fire Algorithm with GOES-R ABI Simulated Data

- R. Pu   Internal Award, USF   Held $6,953   2007-08
  Hyperspectral and High Spatial Resolution Data Analysis for mapping Tree Canopy

- Shawn Landry City of Tampa, FL   Held $100,000   2007-08
  R. Pu (Co-PI) City of Tampa Urban Ecological Analysis

- R. Pu   Patel Center for Global Solutions, USF   Held $1,000   2008
  International travel funds from The Dr. Kiran C. Patel Center for Global Solutions, USF

- R. Pu   CAS, USF   Held $1,000   2009
  Faculty Research & Development Grant

- Susan Bell (PI) NASA, USA   Held $359,539   2009-13

R. Pu (Sci. PI) Mapping and Characterization of Seagrass habitats Using Spacecraft Observations

• Shawn Landry City of Tampa, FL   Held $250,000   2010-13
  R. Pu (Co-PI) City of Tampa Urban Ecological Analysis and Management Plan 2010-2013

• Shawn Landry USFS, USA   Held $45,978   2014-15
  R. Pu (Co-PI) Predicting i-Tree Ecosystem Services from Remote Sensing Metrics

AWARDS

2010	Board Service Award for outstanding service and dedication as a Board member for 2007-2010, Chinese American Association of Tampa Bay (CAAT).
2001	Outstanding Service Award, The International Association of Chinese Professionals in Geographic Information Science (CPGIS)
1991	Prize of Science Technology, second place, by The Ministry of Forestry of China
1991	The best scientific paper from The Association of Remote Sensing in Jiangsu Province, China
1987	Prize of Science Technology, second place, by Jiangsu Province, China
1988	Prize of Science Technology, third place, by The Ministry of Forestry of China.

PROFESSIONAL AFFILIATION

Member,	American Geophysical Union	2005-
Member,	Association of American Geographers	2003-
Member,	American Society for Photogrammetry & Remote Sensing	1995-
Member,	The Association of Chinese Professional in GIS (Abroad)	1994-

PUBLICATIONS
Manuscripts submitted for review:

Bao, Y., C. Qian, J. Min, **R. Pu**, J. Xu, L. Liu, 2014. Estimation of Wheat Shoot Nitrogen Content at the Vegetative Stage with Satellite Images. ***Remote Sensing*** (in review).

Wang, H., **R. Pu,** Q. Zhu, L. Ren, 2014. Mapping health levels of robinia pseudoacaci forests in the yellow river delta, china, using Ikonos and landsat 8 OLI imagery. ***International Journal of Remote Sensing,*** (in review).

Huang, W., Q. Yang, **R. Pu**, L. Liu, L. Huang, D. Zhang, G. Yang, 2014. Estimation of nitrogen vertical distribution by bi-directional canopy reflectance in winter wheat. ***Sensors***, (in review).

Yuan, Lin, **Pu, R.**, Zhang, J. Wang, J., Yang, H. Yang, G., 2014. Using high spatial resolution satellite imagery for mapping powdery mildew at a regional scale. ***Precision Agriculture***, (in review).

Pu, R., S. Landr y, and J., Zhang, 2014. Evaluation of atmospheric correction methods in identifying urban tree species with WorldView-2 imagery. ***Journal of Selected Topics in Applied Earth Observations and Remote Sensing***, (in review)

Yang, G., **R. Pu**, C. Zhao, Z. Li, H. Feng, and H. Li., 2014. Retrieving wheat leaf nitrogen content by using an extended PROSPECT model and partial least squares regression. ***Journal of Geophysical Research***, (in review)

Refereed Articles:

[77] Gong, Z., T. Cuia, and **R. Pu**, 2015. Simulating a dynamic succession of vegetation abundance in a reservoir riparian zone using a sub-pixel markov model. International Journal of Applied Earth

Observation and Geoinformation, (in press).

[76] **Pu, R**., S. Bell, and C. Meyer, 2014. Mapping and Assessing Seagrass Bed Changes in Central Florida's West Coast Using Multitemporal Landsat TM Imagery. *Estuarine, Coastal and Shelf Science*, 149: 68-79. DOI: 10.1016/j.ecss.2014.07.014

[75] Zhang, J., **R. Pu**, L. Yuan, C. Nie, and G. Yang, 2014. Integrating remotely sensed and meteorological observations to forecast wheat powdery mildew at a regional scale. *Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. (in press). DOI: 10.1109/JSTARS.2014.2315875

[74] Zhang, J., **R. Pu**, L. Yuan, C. Zhao, J. Wang, W. Huang, and G. Yang, 2014, Monitoring powdery mildew of winter wheat by using moderate resolution multi-temporal satellite imagery, *PLOS ONE*, 9(4): e93107. doi:10.1371/journal.pone.0093107

[73] Wang, H., J. Gao, **R. Pu**, L. Ren, Y. Kong, H. Li, and L. Li, 2014, Natural and anthropogenic influences on a red-crowned crane habitat in the Yellow River Delta Natural Reserve, 1992-2008. *Environmental Monitoring and Assessment* 186:4013-4028.

[72] Liu, L., W. Huang, **R. Pu**, and J. Wang, 2014, Detection of internal leaf structure deterioration using a new spectral ratio index in the near-infrared shoulder region. *Journal of Integrative Agriculture* 13(4): 760-769

[71] **Pu, R**., S. Bell, and D. English, 2014. Developing hyperspectral vegetation indices for identifying seagrass species and cover classes. *Journal of Coastal Research*, (in press). DOI: 10.2112/JCOASTRES-D-12-00272.1

[70] Yang, G., **R. Pu**, C. Zhao, X. Xue, 2014. Estimating high spatiotemporal resolution evapotranspiration over a winter wheat field using an IKONOS image based complementary relationship and Lysimeter observations. *Agricultural Water Management*, 133:34-43.

[69] Zhang, J., L. Yuan, **R. Pu**, R. W. Loraamm, and J. Wang, 2014. Comparison between wavelet spectral features and conventional spectral features in detecting yellow rust for winter wheat. *Computers and Electronics in Agriculture*, 100:79-87.

[68] **Pu, R**.; and S. Bell, 2013. A protocol for improving mapping and assessing of seagrass abundance along the West Central Coast of Florida using Landsat TM and EO-1ALI/Hyperion images. *ISPRS Journal of Photogrammetry and Remote Sensing*, 83:116–129.

[67] Weng, F. and **R. Pu**, 2013, Mapping and Assessing of Urban Impervious Areas Using Multiple Endmember Spectral Mixture Analysis: A Case Study in the City of Tampa, Florida. *Geocarto International,* 28(7):594-615.DOI: 10.1080/10106049.2013.764355.

[66] Yang, G., **R. Pu**, J. Zhang, C. Zhao, H. Feng, and J. Wang, 2013. Remote sensing of seasonal variability of fractional vegetation cover and its object-based spatial pattern analysis over mountain areas, *ISPRS Journal of Photogrammetry and Remote Sensing*, 77:79-93.

[65] Zhao, Y., **R. Pu**, S. Bell, C. Meyer, L. Baggett, and X. Geng, 2013, Hyperion image optimization in coastal waters, *IEEE Transactions on Geoscience and Remote Sensing*, 51(2):1025-1036. DOI:10.1109/TGRS.2012.2205262.

[64] **Pu, R**.; Bell, S.; Meyer, C.; Lesley Baggett, L., and Zhao, Y., 2012. Mapping and Assessing Seagrass Habitats Using Satellite Imagery. *Estuarine, Coastal and Shelf Science*, 115: 234-245. http://dx.doi.org/10.1016/j.ecss.2012.09.006.

[63] Zhang, J., **R. Pu**, W. Huang, J. Luo and J. Wang, 2012, Using hyperspectral remote sensing for detecting and discriminating yellow rust disease from nutrient stresses, *Field Crop Research*, 134:165-174.

[62] **Pu, R**., and S. Landry, 2012, A comparative analysis of high resolution IKONOS and WorldView-2 imagery for mapping urban tree species, *Remote Sensing of Environment*,124:516-533.

[61] **Pu, R**., S. Bell, L. Baggett, C. Meyer1, and Y. Zhao, 2012, Discrimination of seagrass species and cover classes with in situ hyperspectral data, *Journal of Coastal Research*, 28(6):1330-1344, DOI: 10.2112/JCOASTRES-D-11-00229.1

[60] **Pu, R**., 2012, Mapping leaf area index over a mixed natural forest area using ground-based measurements and Landsat TM imagery. *International Journal of Remote Sensing* 33(20): 6600–6622

[59] George Xian, Collin Homer, Brett Bunde, Patrick Danielson, Jon Dewitz, Joyce Fry & **Ruiliang Pu** 2012, Quantifying urban land cover change between 2001 and 2006 in the Gulf of Mexico region, *Geocarto International*, 27(6): 479–497, DOI:10.1080/10106049.2011.652675

[58] Zhang, J**., R. Pu**, J. Wang, and W. Huang, 2012, Detecting powdery mildew of winter wheat using leaf level hyperspectral measurements, *Computers and Electronics in Agriculture*, 85:13-23

[57] Meyer, C. and **R. Pu**, 2012, Assessment of Seagrass Resources using Remote Sensing Methods in St.

Joseph Sound and Clearwater Harbor, Florida, U.S.A. *Environmental Monitoring and Assessment* 184:1131–1143.

[56] **Pu, R**., 2012, Comparing canonical correlation analysis with partial least square regression in estimating forest leaf area index with multitemporal landsat TM imagery, *GIScience & Remote Sensing*, 49(1): 92–116. DOI: 10.2747/1548-1603.49.1.92

[55] Okwen, R. T., **R. Pu**, and J. A. Cunningham, 2011, Remote sensing of temperature variations around major power plants as point sources of heat. *International Journal of Remote Sensing,* 32(13): 3791-3805, doi.org/10.1080/01431161003774723.

[54] **Pu, R**., S. Landry, and Q. Yu, 2011, Object-Based Urban Detailed Land Cover Classification with High Spatial Resolution IKONOS Imagery. *International Journal of Remote Sensing*, 32(12): 3285-3308, doi.org/10.1080/01431161003745657.

[53] **Pu, R**. and D. Liu, 2011, Segmented canonical discriminant analysis of in situ hyperspectral data for identifying thirteen urban tree species. *International Journal of Remote Sensing*, 32(8):2207-2226, DOI: 10.1080/01431161003692040.

[52] Sun Y., H. Gong, X. Li, **R. Pu**, and S. LI, 2011, Extracting eco-hydrological information of inland wetland from L-band synthetic aperture Radar image in Honghe National Nature Reserve, northeast China. *Chin. Geogra. Sci.*, 21(2):241-248, doi: 10.1007/s11769-011-0460-6.

[51] Yang, G., **R. Pu**, C. Zhao, W. Huang, and J. Wang, 2011, Estimation of subpixel land surface temperature using an endmember index based technique: A case examination on ASTER and MODIS temperature products over a heterogeneous area, *Remote Sensing of Environment*, 115:1202-1219.

[50] **Pu, R.**, 2011, Mapping urban forest tree species using IKONOS imagery: Preliminary results. *Environmental Monitoring and Assessment*, 172: 199-214, DOI 10.1007/s10661-010-1327-5.

[49] Yang, G., **R. Pu**, W. Huang, J. Wang, and C. Zhao, 2010, A novel method to estimate subpixel temperature by fusing solar-reflective and thermal-infrared remote-sensing data with an artificial neural network. *IEEE Transactions on Geoscience And Remote Sensing*, 48(4):2170-2178.

[48] Landry, S. and **R. Pu**, 2010, The impact of land development regulation on residential tree cover: an empirical evaluation using high resolution IKONOS imagery, *Landscape and Urban Planning*, 94: 94–104.

[47] Song, X. J. Wang, W. Huang, L. Liu, G. Yan, & **R. Pu**, 2009, The delineation of agricultural management zones with high resolution remotely sensed data. *Precision Agric*., 10:471–487.

[46] **Pu, R.**, 2009, Broadleaf Species Recognition with In Situ Hyperspectral Data, *International Journal of Remote Sensing*, 30(11):2759-2779.

[45] Yu, Q., P. Gong, Y.Q. Tian, and **R. Pu**, 2008, Factors affecting spatial variation of classification uncertainty in an object-based vegetation mapping, *Photogrammetric Engineering and Remote Sensing*, 74(8):1007-1018.

[44] **Pu, R.,** P. Gong, and Q. Yu, 2008, Comparative Analysis of EO-1 ALI and Hyperion, and Landsat ETM+ Data for Mapping Forest Crown Closure and Leaf Area Index, *Sensors*, 8:3744-3766, DOI:10.3390/s8063744.

[43] Liu, D. and **R. Pu**, 2008, Downscaling Thermal Infrared Radiance for Subpixel Land Surface Temperature Retrieval, *Sensors*, 8:2695-2700.

[42] **Pu, R.**, P. Gong, Y. Tian, X. Miao, R. Carruthers, and G. L. Anderson, 2008, Using Classification and NDVI Differencing Methods for Monitoring Sparse Vegetation Coverage: A Case Study of Saltcedar in Nevada, USA, *International Journal of Remote Sensing*. 29(14):1987-4011.

[41] **Pu, R**., P. Gong, R. Michishita, and T. Sasagawa, 2008, Spectral Mixture Analysis for Mapping Abundance of Urban Surface Components from the Terra/ASTER Data, *Remote Sensing of Environment*. 112:939-954.

[40] **Pu, R**., N. M. Kelly, Q. Chen and P. Gong, 2008, Spectroscopic determination of health levels of Coast Live Oak (*Quercus agrifolia)* Leaves, *Geocarto International.* 23(1):3-20.

[39] **Pu, R**., M. Kelly, G. L. Anderson and P. Gong, 2008, Using CASI hyperspectral imagery to detect mortality and vegetation stress associated with a new hardwood forest disease, *PE&RS*, 74(1):65-75.

[38] **Pu, R**., P. Gong, Y. Tian, X. Miao, R. Carruthers, and G. L. Anderson, 2008, Invasive Species Change Detection Using Artificial Neural Networks and CASI Hyperspectral Imagery, *Environmental Monitoring and Assessment.* 140:15-32, DOI 10.1007/s10661-007-9843-7.

[37] Miao, X., P. Gong, **R. Pu**, R. I. Carruthersc, J. S. Heatond, 2007, Applying Class-based Feature Extraction Approaches for Supervised Classification of Hyperspectral Imagery. *Canadian Journal of Remote Sensing*, 33(3):162-175.

[36] Miao, X., P. Gong, S. Swope, **R. Pu**, R. Carruthers, G. L. Anderson, 2007, Detection of Yellow Starthistle through Band Selection and Feature Extraction from Hyperspectral Imagery, *PE &RS*. 73(9):1005-1015.

[35] **Pu, R**., Z. Li, P. Gong, I. Csiszar, R. Fraser, W.-M. Hao, S. Kondragunta, and F. Weng, 2007, Development and Analysis of a 12-year Daily 1-km Forest Fire Data across the North America from NOAA/AVHRR Data, *Remote Sensing of Environment*. 108:198-208.

[34] **Pu, R**., P. Gong, R. Michishita, and T. Sasagawa, 2006, Assessment of Multi-Resolution and Multi-Sensor Data for Urban Surface Temperature Retrieval, *Remote Sensing of Environment*. 104:211-225.

[33] Miao, X., P. Gong, S. Swope, **R. Pu**, R. Carruthers, G. L. Anderson, J. S. Heaton and C. R. Tracy, 2006, Estimation of yellow starthistle abundance through CASI-2 hyperspectral imagery using linear spectral mixture models, *Remote Sensing of Environment*. 101(3):329-341.

[32] Gong, P., **R. Pu**, Z. Li, N. Clinton and Lisa M. Levien, 2006, An integrated approach to wildland fire mapping of California, USA using NOAA/AVHRR data, *PE & RS*, 72(2):139-150.

[31] **Pu, R**., Q. Yu, P. Gong and G. S. Biging, 2005, EO-1 Hyperion, ALI and Landsat 7 ETM+ data comparison for estimating forest crown closure and leaf area index, *International Journal of Remote Sensing*, 26(3):457-474.

[30] Clinton, N., P. Gong and **R. Pu**, 2004, Evaluation of wildfire mapping with NOAA/AVHRR data by land cover types and eco-regions in California, *Geographic Information Sciences*, 10(1):10-19.

[29] **Pu, R**., L. Foschi, and P. Gong, 2004, Spectral feature analysis for assessment of water status and health level of coast live oak (*Quercus Agrifolia)* leaves**, *International Journal of Remote Sensing*, 25(20):4267-4286.

[28] **Pu, R**., P. Gong, Z.Q. Li, J. Scarborough, 2004, A dynamic algorithm for wild land burned scar detection using NOAA AVHRR data, *International Journal of Wildland Fire*, 13:275-285.

[27] **Pu, R**. and P. Gong , 2004, Determination of burnt scars using logistic regression and neural network techniques from a single post-fire Landsat-7 TM imagery, *PE&RS*, 70(7): 841-850.

[26] **Pu, R**. and P. Gong, 2004, Wavelet transform applied to EO-1 hyperspectral data for forest LAI and crown closure mapping, *Remote Sensing of Environment,* 91:212-224.

[25] **Pu, R**. and P. Gong, 2003, Spectral feature analysis for estimation of water status of coast live oak (*Quercus agrofolia*) leaves, *Journal of Remote Sensing* (China), Supplement, 7:165-173.

[24] Gong, P. and **R. Pu**, 2003, LAI mapping with surface reflectance retrieved from ALI, Hyperion and AVIRIS, *Journal of Remote Sensing* (China), Supplement, 7:174-187.

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Updated on October 5, 2014