CURRICULUM VITAE

I. Biographical Data

A. Contact information

Name in full:	**Nguyen Thanh Son**
Address:	Center for Space and Remote Sensing Research, National Central University, No. 300, Jhongda Rd., Jhongli City, Taoyuan County 32001, TAIWAN
Telephone:	+886 0933 012 400
E-mail:	ntson@csrsr.ncu.edu.tw, ntsonait@hotmail.com, ntsonagu@gmail.com

B. Education:

Ph.D. of Geo-information Engineering, National Central University (NCU), Taoyuan, Taiwan, 2011

M.Sc. of Natural Resources Management, Asia Institute of Technology (AIT), Bangkok, Thailand, 2005

B.Sc. of Environment and Natural Resources Management, Cantho University (CTU), Cantho, Vietnam, 2000

C. Research areas of interest:

My research interests include the following themes:

- Remote sensing (RS)
- Geographic Information Systems (GIS)
- Time-series satellite data processing and analysis
- RS and GIS applications for agricultural and environmental monitoring

Ongoing studies include:

- Crop mapping;
- Crop yield modeling;
- Drought/flood/salinity monitoring;
- Early warning of crop diseases; and
- Climate change associated with land use and food security

D. Position held:

May 2011 – present: Postdoctoral fellow, Center for Space and Remote

Sensing Research (CSRSR), NCU, Taoyuan, Taiwan.

Nov 2000 − Aug 2007: Lecturer, Faculty of Agriculture & Natural Resources, An Giang University (AGU), Long Xuyen, Vietnam

E. Special honors and awards:

1. NCU Ph.D. scholarship, Taoyuan, Taiwan, Sep 2007−Apr 2011.

2. Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) Ph.D. scholar research fellowship, Los Banos, Philippines, Nov 2009−Nov 2010.

3. 30th Asian Conference on Remote Sensing (ACRS) best paper award, Beijing, China, 2009.

II. Pedagogy

A. Teaching experience

- Teaching assistant for the following two graduate courses at Department of Civil Engineering, NCU, Taiwan [2009−2013]:
    - CI7065   Geographical Information Systems
    - CI7078   Spatial Data Analysis and Application
- Invited lecture for the following courses:
    - Capability Enhancement in Using Geographic Information Systems in Central America. Tegucigalpa, Honduras, 3−14 Jun 2013.
    - 7th ISPRS Student Consortium and WG VI/5 Summer School: "Agriculture monitoring using multi-temporal MODIS data". 8−12 Oct 2011, NCU, Taiwan.
    - Capacity building workshop of satellite remote sensing for Southeast Asian Scientists "Mapping the rice cropping systems using time series satellite data", Sep 13−21, 2012.
- Taught the following AGU undergraduate course:
    - Project planning and implementation [2006−2007]

A. Student supervision

I am the co-advisor of the following M.Sc. theses:

1. Indra, S. Rice crop mapping and yield estimation with multi-temporal MODIS imagery in the northern part of West Java province [on going, expected graduation Jun 2014]

2. Phuong, L.T. Regional rice yield estimation with MODIS and ENVISAT imageries [on going, expected graduation Jun 2014].

3. Lin, H.S. Monitoring flood-affected rice cultivation areas using time-series MODIS imagery in the Irrawaddy Delta, Myanmar [on going, expected graduation Jun 2015].

4. Lin. H.Y. On the use of MODIS-Landsat data fusion for mapping sugarcane fields in Belize [on going, expected graduation Jun 2015].

III. Research

A. Publications

1. Referred journal articles

1. <u>Son, N.T.</u>, C.F. Chen, C.R. Chen. A comparative analysis of multitemporal MODIS EVI and NDVI data for large-scale rice yield estimation. *Submitted to Agricultural and Forest Meteorology* (SCI, 2012 Impact Factor: 3.421). *Under review.*

2. C.F. Chen, C.R. Chen, <u>N.T. Son</u>, N.B. Chang, L.Y. Chang, H.Y. Guo, W.S. Lo. Mapping small-scale rice fields with multitemporal MODIS-SPOT data fusion. *Submitted to Remote Sensing* (SCI, 2012 Impact Factor: 2.101). *Under review.*

3. <u>Son, N.T.</u>, C.F. Chen, C.R. Chen. Weekly flood monitoring with multitemporal MODIS data using water fraction model. *Submitted to Journal of Applied Remote Sensing* on 31-Jan-2014 (SCI, 2012 Impact Factor: 0.876). *Under review.*

4. <u>Son, N.T.</u>, C.F. Chen, H.N. Duc, C.R. Chen. Impacts of climate change and climate variability on rice crop yields in the Mekong Delta, Vietnam. *Submitted to Journal of Paddy and Water Environment o*n 31-Jan-2014 (SCI, 2012 Impact Factor: 1.025). *Under review.*

5. <u>Son, N.T.</u>, C.F. Chen, N.B. Chang, C.R. Chen. Spatiotemporal change detection of mangrove forests with object-oriented fuzzy classification and Landsat data in Ca Mau peninsula, South Vietnam. *Submitted to IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* on 23-Jan-2014 (SCI, 2012 Impact Factor: 2.874). *Under review.*

6. <u>Son, N.T.</u>, C.F. Chen, C.R. Chen, H.N. Duc, L.Y. Chang. A phenology-based classification of time-series MODIS data for rice crop monitoring in Mekong Delta, Vietnam. *Remote Sens. **2014**, 6(1);* DOI:10.3390/rs6010135. (SCI, 2010 Impact Factor: 2.101).

7. C.F. Chen. <u>N.T. Son</u>, C.F. Chen, N.B. Chang, C.R. Chen, L.Y. Chang, L.Y. Chang, M. Valdez, G. Centeno, C. Thompson, J.L. Aceituno. (2013). A multi-decadal survey of mangrove forest change using Landsat images. *Remote Sensing*. doi:10.3390/rs5126408. *(Corresponding author)*

8. <u>Son, N.T.</u>, C.F. Chen, N.B. Chang, C.R. Chen, L.Y. Chang. Delineation of mangrove density in Central America from Rapideye imageries using support vector machines. *Submitted to Journal of Spatial Science* on 04 Sep 2013, (SCI, 2012 IF = 0.629). *Under review.*

9. <u>Son, N.T.</u>, C.R. Chen, C.F. Chen, L.Y. Chang. (2013). Satellite-based assessment of flood-affected rice cultivation areas in Chao Phraya Delta, Thailand using multi-temporal MODIS imagery. *ISPRS Journal of Photogrammetry and Remote Sensing*. DOI: 10.1016/j.isprsjprs.2013.09.008. (SCI, 2012 IF = 3.313)

10. <u>Son, N.T.</u>, C.R. Chen, C.F. Chen, L.Y. Chang, Duc, H. N. (2013). Prediction of rice crop yield from MODIS imageries in the Mekong Delta,

Vietnam. *International Journal of Remote Sensing.* DOI:10.1080/01431161.2013.818258. (SCI, 2012 IF = 1.138).

11. Son, N.T., C.F. Chen. (2013). Remote sensing of mangrove forests in Central America. *SPIE Newsroom.* DOI: 10.1117/2.1201304.004771.

12. Son, N.T., Chen, C.F., Chen, C.R., Chang, L.Y., Thanh, B.X. (2012). Urban growth mapping from Landsat data using linear mixture model in Ho Chi Minh City, Vietnam. *Journal of Applied Remote Sensing, 6,* DOI.10.1117/1.JRS.6.063543 (SCI, 2012 IF = 0.876).

13. Son, N.T., Chen, C.F. Chen, C.R., Chang, L.Y., Minh, V.Q. (2012). Monitoring agricultural drought in the Lower Mekong Basin using MODIS NDVI and land surface temperature data. *International Journal of Applied Earth Observation and Geoinformation*, 18, 417−427. DOI: 10.1016/j.jag.2012.03.014. (SCI, 2012 IF = 2.176).

14. Chen, C.F. Chen, C.R., N.T. Son. (2012). Delineating rice cropping activities from MODIS data using wavelet transform and artificial neural networks in the Lower Mekong countries. *Agriculture, Ecosystems & Environment.* DOI: 10.1016/j.agee.2012.09.005. (SCI, 2010 IF = 3.004)

15. Chen, C.F., Chen, C.R., N.T. Son. (2011). Investigating rice cropping practices and growing areas from MODIS data using empirical mode decomposition and support vector machines. *GIScience and Remote Sensing*, 9, 117−138. DOI: 10.2747/1548−1603.49.1.117. (SCI, 2010 IF = 1.000).

16. Chen, C.F., N.T. Son. Chang, L.Y. (2011). Monitoring of rice cropping intensity in the upper Mekong Delta, Vietnam using time-series MODIS data. *Advances in Space Research,* 49, 292−301. DOI: 10.1016/j.asr.2011.09.011 (SCI, 2010 IF = 1.076). *(Corresponding author).*

17. Chen, C.F., N.T. Son. Chang, L.Y., Chen, C.R. (2011). Monitoring of soil moisture variability in relation to rice cropping systems in the Vietnamese Mekong Delta using MODIS data. *Applied Geography, 31*, 463−475. DOI: 10.1016/j.apgeog.2010.10.002. (SSCI, 2011 IF = 3.082). *(Corresponding author)*

18. Chen, C.F. Huang, S.W., N.T. Son., Chang, L.Y. (2011). Mapping double-cropped irrigated rice fields in Taiwan using time-series Satellite Pour I'Observation de la Terre data. *Journal of Applied Remote Sensing, 5,* 053−528. DOI: 10.1117/1.3595276. (SCI, 2010 IF = 1.000).

19. Chen, C., N.T. Son., Chen, C.R., Chang, L.Y. (2011). Wavelet filtering of time-series moderate resolution imaging spectroradiometer data for rice crop mapping using support vector machines and maximum likelihood classifier. *Journal of Applied Remote Sensing,* 5, 053525. DOI: 10.1117/1.3595272. (SCI, 2010 IF = 1.000). *(Corresponding author)*

20. Chen, C.F., N.T. Son., Chang, L.Y., Chen, C.R. (2011). Classification of rice cropping systems by empirical mode decomposition and linear mixture model for time-series MODIS 250 m NDVI data in the Mekong Delta, Vietnam. *International Journal of Remote Sensing, 32*, 5115−5134. DOI: 10.1080/01431161.2010.494639. (SCI, 2010 IF = 1.182).

21. <u>Son, N.T.</u>, Hieu, T.V., Shrestha, R.P., Trieu, N.T., Kien, N.V., Anh, V.T., Dung, P.A., Duc, H.N., Du, N.M., and Niem, N.X. (2008). Integrated land−use planning for sustainable agriculture and natural resources management in the Vietnamese Mekong delta. *Asia Europe Journal,* 6, 307−324. (SSCI, 2010 IF = 0.237).

22. <u>Son, N. T.</u>, Chen, C. F., Chang, L.Y., Chen, C.R. (2010). The classification of rice cropping systems in southern Vietnam using time-series MODIS data. *Asian Journal of Geoinformatics,* 10(1), 43−47.

23. Chen, C.R., Chen, C.F., <u>N.T. Son.</u> (2011). Monitoring rice growing areas in the Lower Mekong Subregion from MODIS satellite imagery. *Proc. of SPIE* 8174, 817414. DOI: 10.1117/12.897984. (EI).

24. <u>Son, N.T.</u>, Chen, C.F., Chen, C.R. (2011). Investigating agro-drought in the Lower Mekong Basin using MODIS NDVI and land surface temperature data. *Proc. SPIE 8174,* 817411, DOI:10.1117/12.897972. (EI).

2. Non-referred articles

1. <u>Son, N.T.</u>, Tu, N.A. (2008). Determinants of land-use change: A case study from the lower Mekong delta of southern Vietnam. *Electronic Green Journal,* 27, 1−12.

2. Mkhonta, M., Chen, C. F., <u>N.T. Son.</u> (2010). Mapping changing urbanization patterns in Kwaluseni, Swaziland. *Journal of International Cooperation,* 5 (2), 155−165.

3. <u>Son, N.T.</u> (2007). Relation between land-use change and rural income determinants: A case study of policy implication in Tri Ton, Vietnam. *The Electronic Journal on Information Systems in Developing Countries,* 29, 1−9. (ITID Ranked #2 ICT4D).

3. Papers in conference proceedings

1. C.F. Chen, L.C. Chang, <u>N.T. Son</u>, L.Y. Chang, C.R. Chen. (2013). Pseudo-variant features analysis of Landsat imageries for change detection of mangrove forests in Belizean coastal areas. 34th ACRS, 20−24 Oct 2013, Bali, Indonesia.

2. C.F. Chen, G.S. Chen, <u>N.T. Son</u>, L.Y. Chang, C.R. Chen. (2013). Land-cover change prediction from Landsat data using Markov chain analysis. 34th ACRS, 20−24 Oct 2013, Bali, Indonesia.

3. C.F. Chen, V.K. Lau, <u>N.T. Son</u>, C.R. Chen. H.S.T. Phuoc. (2013). The inherent optical properties of waters in South of Vietnam coastline. 34th ACRS, 20−24 Oct 2013, Bali, Indonesia.

4. Chen, C.R., Chen, C.F., <u>N.T. Son.</u> (2013). Blending multi-temporal SPOT and MODIS imageries for rice crop phenology detection. 34th ACRS, 20−24 Oct 2013, Bali, Indonesia.

5. C.F. Chen, L.T. Phuong, <u>N.T. Son</u>, V.K. Lau, C.R. Chen. (2013). Forecasting rice crop yields with time-series MODIS EVI data: a case study from Mekong delta, Vietnam. 34th ACRS, 20−24 Oct 2013, Bali, Indonesia.

6. Indra, S., C. F. Chen, <u>N.T. Son.</u> (2013). Rice crop mapping using multi-temporal MODIS imagery in the northern part of West Java province, Indonesia. 34th ACRS, 20−24 Oct 2013, Bali, Indonesia.

7. Son, N.T., Chen, C.F., Chen, C.R. (2013). Forecasting rice crop yield from multi-temporal MODIS data. International Symposium on Remote Sensing (ISRS), 15−17 May 2013, Chiba, Japan.

8. Chen, C.R., <u>N.T. Son.,</u> Chen, C.F. (2013). Evaluation of Landsat and MODIS data fusion for analysis of rice crop phenology, ISRS, 15−17 May 2013, Chiba, Japan.

9. Chen, C.F., <u>N.T. Son.,</u> Chen, C.R. (2013). Object-based analysis of Landsat imagery for mapping mangrove forests in South Vietnam. ISRS, 15−17 May 2013, Chiba, Japan.

10. Chen, C.F., <u>N.T. Son.,</u> Chen, C.R. (2012). Mapping flood-affected areas from MODIS imagery in Chao Phraya River Delta, Thailand. ISRS, 10−12 Oct 2012, Songdo Covensia, Incheon, Korea.

11. Chen, C.F., Lin, Y.J., Chang, L.Y., <u>N.T. Son.</u> (2012). Estimation of surface soil moisture using MODIS imagery. 33rd ACRS, 26−30 Nov 2012, Pattaya, Thailand.

12. <u>Son, N.T.</u>, Chen, C.F. (2012). Rice crop classification from MODIS imageries using soft and hard classifiers. 33rd Asian Conference on Remote Sensing, 26−30 Nov 2012, Pattaya, Thailand.

13. Chen, C.R., <u>N.T. Son.,</u> Chen, C.F. (2012). Detecting rice crop phenology from time-series MODIS data. 33rd Asian Conference on Remote Sensing, 26−30 Nov 2012, Pattaya, Thailand.

14. <u>Son, N.T.</u>, Chen, C.F. (2012). Mapping major cropping patterns in Southeast Asia from MODIS data using wavelet transform and artificial neural networks. XXIInd ISPRS Congress, 25 Aug−01 Sep 2012, Melbourne, Australia.

15. Chen, C.F., Lin, Y.J., Chang, L.Y., <u>N.T. Son.</u> (2012). Retrieving surface soil moisture from MODIS and AMSR−E data: a case study in Taiwan. XXIInd ISPRS, 25 Aug−01 Sep 2012, Melbourne, Australia.

16. Chen, C.F., <u>N.T. Son.</u> (2012). Monitoring agricultural drought in the Lower Mekong Basin. APEC, 4−7 Jun 2012, Taiwan.

17. Chen, C.F., <u>N.T. Son.</u> (2011). Delineation of spatio-temporal distributions of rice cropping patterns from MODIS imagery: A case study from Mekong Delta, Vietnam. ISRS, 2−4 Nov 2011, Yeosu, Korea.

18. <u>Son, N.T.</u>, Chen, C.F., Chen, C.R., Chang, L.Y. (2011). Spectral unmixing analyses of urban land cover fractions from Landsat data. 32nd ACRS, 3−7 Oct 2011, Taipei, Taiwan.

19. Chen, C.R., Chen, C.F., <u>N.T. Son.,</u> Chang. L.Y. (2010). Using empirical mode decomposition to analyze time-series MODIS data for monitoring rice phenology. 31st ACRS, 1−5 Nov 2011, Hanoi, Vietnam.

20. Valdez, M.C., C.F. Chen, <u>N.T. Son.</u>, Chang, L.Y. (2010). Vegetation recovery monitoring at landslides caused by hurricane Mitch in Honduras, Central America. 31st ACRS, 1−5 Nov, 2010, Hanoi, Vietnam.

21. <u>Son, N. T.</u>, Chen, C.F., Chen, C.R., Chang, L.Y., Valdez, M.C. (2010). Estimating land surface soil moisture variability in the Vietnamese Mekong Delta using MODIS data. 31st ACRS, 1−5 Nov 2010, Hanoi, Vietnam.

22. Chen, C.F., Huang, S.W. Chang, L.Y., <u>N.T. Son.</u>, Chen, C.R. (2010). Empirical mode decomposition and wavelet analysis of time-series spot data for evaluating rice planting calendar. 31st ACRS, 1−5 Nov 2010, Hanoi, Vietnam.

23. <u>Son, N.T.</u>, Chen, C.F., Chang, L.Y., Chen, C.R. (2009). The classification of rice cropping systems in Southern Vietnam using time-series MODIS data. 30th ACRS, 19−23 Oct 2009, Beijing, China.

SIGNATURE: **Nguyen Thanh Son**
DATE: 12 October 2013