

# Sungho Choi

Department of Earth and Environment  
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## Research interests:

Mapping Forest Heights and Biomass  
Geographic Information System / Remote Sensing

Updated on 03/10/2015

## EDUCATION

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**Ph.D. Candidate in Geography, Boston University** **Boston, MA, USA**

Department of Earth and Environment (2011/09 – Current)

Advisor: Prof. Ranga Myneni

**B.Sc., M.Sc., Korea University** **Seoul, South KOREA**

Department of Environmental Science and Ecological Engineering (2008/08, 2010/08)

Advisors: Prof. Woo-Kyun Lee & Prof. Yowhan Son

## EMPLOYMENT, WORK, & TRAINING EXPERIENCES

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**NASA Earth Exchange (NEX), NASA Ames Research Center** **CA, USA**

Visiting Scholar (2014/10 – 2014/12)

**Environmental GIS/RS center, Korea University** **Seoul, South KOREA**

Research Fellow (2010/09 – 2011/08)

**National Institute for Environmental Studies (NIES)** **Tsukuba, JAPAN**

JISTEC (Japan) – NRF (Korea) Research Fellowship Program (2011/01 – 2011/02)

**Institute of Forest Biometry/Informatics, University of Göttingen** **GERMANY**

DAAD (Germany) – NRF (Korea) Research Fellowship Program (2010/07 – 2010/08)

**UNEP – National Committee for the Republic of Korea** **Seoul, South KOREA**

NATCOM Office Student Internship (2007/12 – 2008/03; <http://www.unep.or.kr/>)

## TEACHING EXPERIENCES

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**Teaching Assistant in Fall 2014, Boston University**

GE529 Modeling & Monitoring Terrestrial Ecosystem Processes – Delivering course labs and tutorials on “large-scale mapping forest canopy heights and biomass”

**Teaching Assistant in 2009 – 2010, Korea University**

LIET355 Environmental GIS and Practices;

LIET362 Environmental Remote Sensing and Practices;

LIET432: Research Seminar for Experimental Forest – Developing teaching materials and delivering course labs and tutorials

## SCHOLARSHIPS, HONORS, & AWARDS

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**2015:** KAGES Student Travel Award

**2013 – 2016:** NASA Earth & Space Science Fellowship (NESSF) (\$30,000/yr)

**2014:** Bay Area Environmental Research Institute (BAERI) Research Fellow Grant

**2011 – 2013:** Fulbright Graduate Study Award (\$35,000/yr)

**2011 – 2013:** Dean’s Scholarship – GRS Graduate Scholarship, Boston University

**2011:** JISTEC (Japan) – NRF (Korea) Research Fellow Grant

**2010:** Best Paper Awards in Environmental Sciences, Korea Environment Institute

**2010:** Winner of IUFRO 2010 Best Posters

**2010:** DAAD (Germany) – NRF (Korea) Research Fellow Grant

**2009 – 2010:** Brain Korea (BK21) Scholarship

## PUBLICATIONS

\*indicates corresponding author

### 1. Selected Peer-Reviewed Journal Articles

- [12] Park, T., Kennedy, R.E., \*Choi, S. et al. (2014) Application of physically-based slope correction for maximum forest canopy height estimation using waveform lidar across different footprint sizes and locations: Tests on LVIS and GLAS. *Remote Sens.*, 6(7), 6566-6586.
- [11] Ni, X., Park, T., Choi, S. et al. (2014) Allometric scaling and resource limitations model of tree heights: Part 3. model optimization and testing over continental China. *Remote Sens.*, 6(5), 3533-3553.
- [10] Park, T., Cho, J.-K., Lee, J.-Y., Lee, W.-K., Choi, S. et al. (2014) Unconstrained approach for isolating individual trees using high-resolution aerial imagery. *Int. J. Remote Sens.*, 35(1), 89-114.
- [09] Shi, Y., \*Choi, S. et al. (2013) Allometric scaling and resource limitations model of tree heights: Part 1. model optimization and testing over continental USA. *Remote Sens.*, 5(1), 284-306.
- [08] \*Choi, S. et al. (2013) Allometric scaling and resource limitations model of tree heights: Part 2. site based testing of the model. *Remote Sens.*, 5(1), 202-223.
- [07] Kwak, D.-A., Lee, W.-K., Son, Y., Choi, S. et al. (2012) Predicting distributional change of forest cover and volume in future climate of South Korea. *Forest Sci. Tech.*, 8(2): 105-115.
- [06] Choi, S. et al. (2011) Predicting forest cover changes in future climate using hydrological and thermal indices in Korea. *Climate Res.*, 49: 220-245.
- [05] Cui, G., Lee, W.-K., Kwak, D.-A., Choi, S. et al. (2011) Desertification monitoring by LANDSAT TM satellite imagery. *Forest Sci. Tech.*, 7(3): 110-116.
- [04] Badarch, O., Lee, W.-K., Kwak, D.-A., Choi, S. et al. (2011) Mapping forest functions using GIS in Selenge province, Mongolia. *Forest Sci. Tech.*, 7(1): 23-29.
- [03] Choi, S. et al. (2011) Vulnerability assessment of forest ecosystem to climate change in Korea using MC1 model. *J. Forest Planning*, 16: 149-161.
- [02] Choi, S. et al. (2010) Changes in the distribution of south Korean forest vegetation simulated using thermal gradient indices. *Sci. China Ser C.*, 53(7): 784-797.
- [01] Kokmila, K., Lee, W.-K., Badarch, O., Kim, S.-R., Choi, S. et al. (2009) Mapping forest functions using GIS at plateau area, Laos. *Forest Sci. Tech.*, 5(2): 57-61.

### 2. Not Listed Peer-Reviewed Journal Articles (In Korean)

- [09] Byun, J., Lee, W.-K., Choi, S. et al. (2012) Vulnerability assessment for forest ecosystem to climate change based on spatio-temporal information. *Kor. J. Remote Sens.*, 28(1): 159-169.
- [08] Kim, J.-C., Lee, C.-B., Choi, S. (2012) A simulation study on future climate change considering potential forest distribution change in landcover. *J. Environ. Impact Assessment*, 21(1): 105-117.
- [07] Lee, S., Choi, S. et al. (2011) Vulnerability assessment of forest distribution by the climate change scenarios. *J. Kor. Forest Soc.*, 100(2): 256-265.
- [06] Lee, S., Choi, S. et al. (2011) The effect of climate data applying temperature lapse rate on prediction of potential forest distribution. *Kor. Spatial Info. System Soc.*, 19(2): 19-27.
- [05] Chung, J.-W., Lee, W.-K., Cui, G., Lee, S., Choi, S. et al. (2010) Application of

assessment models for water resource vulnerability to climate change and comparative study of segmentation scale. *J. Kor. Soc. Clim. Change Res.*, 1(1): 21-30.

- [04] Yu, H.-S., Lee, W.-K., **Choi, S.** et al. (2010) Process development for optimizing sensor placement using 3D information by lidar. *Kor. Spatial Info. System Soc.*, 18(2): 3-12.
- [03] Choi, H.-A., Lee, W.-K., Kwak, H., **Choi, S.** (2009) Climate change vulnerability assessment based on spatio-temporal information. *Kor. Spatial Info. System Soc.*, 11(3): 63-69.
- [02] Kim, S.-R., Lee, W.-K., Kwak, H., **Choi, S.**, (2009) Estimating carbon sequestration in forest using KOMPSAT-2 imagery. *J. Kor. Forestry Soc.*, 98(3): 324-330.
- [01] Eam, M.-J., Lee, W.-K., Son, Y., Cho, Y., **Choi, S.** (2009) The analysis of youth's understanding on global warming. *J. Energy & Clim. Change*, 4(2): 65-76.

### **3. Selected Presentations and Invited Talks**

- [12] **Choi, S.**, et al. (2014/12/15) *Satellite lidar data do not show static greenness in wet equatorial Amazonian rainforests*. Proceedings of the AGU Fall meeting 2014. American Geophysical Union. (San Francisco, CA, USA)
- [11] **Choi, S.** (2014/11/16) *Large-scale Mapping Forest Canopy Heights and Biomass using Lidar Data and Metabolic Scaling Theory*. NASA Ames Earth Science Seminar (Mountain View, CA, USA)
- [10] **Choi, S.**, Myneni, R. (2014/04/10) *Allometric scaling and resource limitations model of total aboveground biomass in forest stands: model optimization and testing over continental USA*. Proceedings of the AAG Annual Meeting 2014. Association of American Geographers. (Tampa, FL, USA)
- [09] **Choi, S.**, et al. (2013/12/09) *Allometric scaling and resource limitations model of total aboveground biomass in forest stands: Site-scale test of model*. Proceedings of the AGU Fall meeting 2013. American Geophysical Union. (San Francisco, CA, USA)
- [08] **Choi, S.**, et al. (2010/10/28) *Climate change impact and vulnerability on forest area in Korea*. Proceedings of the International Symposium on Remote Sensing 2010. International Symposium on Remote Sensing. pp 735-737. (Jeju, KOREA)
- [07] **Choi, S.**, et al. (2010/10/27) *Up and down scaling in the assessment of climate change impact using ecosystem models*. Proceedings of the International Symposium on Remote Sensing 2010. International Symposium on Remote Sensing. pp 210-213. (Jeju, KOREA)
- [06] **Choi, S.**, et al. (2010/08/24) *Predicting the changes in forest distribution using the thermal and hydrological indices*. Proceedings of the XXIII IUFRO World Congress. IUFRO. pp 64. (Seoul, KOREA)
- [05] **Choi, S.**, et al. (2010/03/18) *Predicting vegetation distribution using thermal gradient indices and drought index*. Proceedings of the 57<sup>th</sup> Annual Meeting of the Ecological Society of Japan, Tokyo University, Japan. pp 489. (Tokyo, JAPAN)
- [04] **Choi, S.**, et al. (2009/12/15) *Climate change impact on forest cover using warmth index and minimum temperature in Korea*. Proceedings of the AGU Fall meeting 2009. American Geophysical Union. (San Francisco, CA, USA)
- [03] **Choi, S.**, et al. (2009/10/28) *Assessing vegetation distribution and carbon fluxes using RS-based model*. Proceedings of the International Symposium on Remote Sensing 2009. International Symposium on Remote Sensing. pp 224-227. (Busan, KOREA)
- [02] **Choi, S.**, et al. (2009/09/22) *Simulating vegetation responses and carbon fluxes to climate change using MC1 model*. Proceedings of the IUFRO 2009 Conference, Niigata.

Japan Society of Forest Planning, Japan. pp 40. (Niigata, JAPAN)

[01] **Choi, S.**, et al. (2009/07/15) *Predicting the vegetation distribution and terrestrial carbon-fluxes using MC1 model*. Proceedings of the ESRI 2009 International User Conference. ESRI. (San Diego, CA, USA)

## **PROFESSIONAL SERVICES**

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### **Journal Reviews – Year: Journal Name (# of Reviews)**

**2015:** Remote Sensing (1)

**2014:** Forests (1)

**2014:** Remote Sensing (1)

**2014:** Global Change Biology (1)

**2013:** Remote Sensing (2)

## **MEMBERSHIPS & ACTIVITIES**

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**2014/12:** Student Volunteer, American Geophysical Union (AGU) Fall Meeting 2014

**2013 – Current:** Student Member, Association of American Geographers (AAG)

**2012 – 2014:** Student Committee Member, Atmospheric Radiation of American Meteorological Society (AMS)

**2009 – Current:** Student Member, AGU

**2009/06:** Student Organizer, International Workshop on “Remote Sensing Technologies & Applications in Climate & Global Environmental Changes”, (Korea Univ., Seoul, KOREA)

**2009/06:** Student Organizer, International Seminar on “Combating Desertification and Adaptation Strategies for Climate Change in Asian Countries”, (Korea Univ., Seoul, KOREA)

## **SKILLS**

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Computer Programming (*Matlab, Python, C++*, & *Fortran*)

GIS/RS Software (*ArcGIS 9.3 & ENVI 4.6*)

## **REFEREES**

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### **Dr. Ranga MYNENI**

Professor, Department of Geography and Environment,  
Boston University, Boston, MA 02215, USA

### **Dr. Woo-Kyun LEE**

Professor, Department of Environmental Science and Ecological Engineering,  
Korea University, Seoul 136-713, KOREA

### **Dr. Yowhan SON**

Professor, Department of Environmental Science and Ecological Engineering,  
Korea University, Seoul 136-713, KOREA

### **Dr. Menas KAFATOS**

Dean, Schmid College of Science,  
Chapman University, Orange, CA 92866, USA