# CAN TRONG NGUYEN

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Google Scholar | ResearchGate | ORCID | Scopus

## RESEARCH INTERESTS

* Environmental Geography * Land Change Science * Environment Management * Urban Microclimate * Urban Environmental Management & Planning * Ecosystem Services * Environmental Sustainability

## EDUCATION

**Ph.D.** King Mongkut's University of Technology Thonburi, Thailand 07/2019 – 08/2022
Environmental Technology, "*Assessment of Climate Change and Urbanization Impacts on Urban Surface Temperature and Ecosystem Services of Urban Green Spaces*"

**M.Sc.** Can Tho University, Vietnam 08/2016 – 12/2018
Land Management, "*Analysis of Urban Heat Island and Energy Consumption in Bangkok Metropolitan Area using Remote Sensing*"

**B.Eng.** Can Tho University, Vietnam 08/2012 – 02/2016
Land Management, "*Studying and Evaluating Ecosystem Service of Rice-Shrimp Farming in An Minh District, Kien Giang Province*"

## RESEARCH EXPERIENCE

**Environment Centre, Charles University**, Czech Republic 10/2023 – *present*

**Researcher**

- Work on "Pathways towards Environmental Sustainability (GAČR EXPRO; 2023–2027)" project.
- Develop biodiversity intactness algorithm and maps at global scale.
- Harmonize and validate datasets to create a consistent global land use time series dataset.
- Collect and impute missing data in FAOSTAT for buffalo/bison for the Americas and Europe.
- Integrate FAOSTAT and auxiliary data to extend Spatial Production Allocation Model (SPAM) and GLW (Global Livestock of the Worl) data for long-term assessments.
- Synthesize diverse datasets to allocate forest/land use appropriation for cropland and livestock sectors.

**Prince of Songkhla University (PSU - *Hatyai campus*)** *and* 08/2022 – 08/2023
**Geo-Informatics & Space Technology Development Agency**, Thailand

**Researcher**

- Conduct a project of "Space Technology for Monitoring Urban Environmental Quality toward Regional Sustainable Development".
- Research member of "Integrated Assessment of SDGs for Bangkok Metropolitan Region (BMR) and Eastern Economic Corridor (EEC) based on Earth-Observation and Space

Technology" (a joint project between AIT Thailand & GISTDA under CBAS Global SDG Partnership, 2022 - 2025);

- Be an active consultant for Urban Heat/Cool Islands, and supervise an intern scholar.
- Support Future Earth Thailand.

**JGSEE, KMUTT**, Thailand 08/2019 – 08/2022

**Research Assistant (RA) and Freelance Researcher (FR)**

- Propose and conduct subprojects under So COOL KMUTT plan 2030 in the fields of Urban heat islands, microclimate changes, urban green space planning, and Electricity Consumption.
- Process and visualize air pollution, PM2.5, crop residuals, and health burdens in Thailand.

**Can Tho University**, Vietnam 03/2016 – 07/2019

**Research Assistant (RA)**, College of Environment and Natural Resources

- Plan and conduct field surveys for ground control point collection, and household interviews along the Mekong delta provinces to understand livelihooks, ecosystem services, and climate change problems.
- Research proposal development and Project implementation for several projects of Environmental Management, Ecosystem services, and Remote sensing and GIS applications in different fields (e.g., Land use and Land cover Changes, Coastal management, Agricultural Management, Climate Change, Urban expansion, Disaster Monitoring and Management).
- Trainer for specialized trainings/workshops for local Authorities and Departments regarding, Applications of GIS and Remote sensing in Monitoring growth, pets, and disease on Rice, Forest, and Land use, land cover changes.

**King Mongkut's University of Technology Thonburi**, Thailand 12/2017 – 05/2018

**Visiting Researcher**, KMUTT Geospatial Engineering and Innovation Center

- Acquire and process remote sensing data by using object-based image analysis (OBIA) for urban land use, and urbanization detection.
- Analyze temporal trends and relationships between station-based climate data and electricity consumption.

## TEACHING EXPERIENCE

**Can Tho University**, Vietnam 03/2016 – 07/2019

**Teaching Assistant (TA)**, College of Environment and Natural Resources

- Responsible for some lectures and practical instructions in courses, i.e., *Applied Remote Sensing, Geographic Information System (GIS), GIS in Environments, and Geostatistics.*
- Thesis mentoring for Undergraduates (mainly) and Master students of Land Management.

## HONORS AND AWARDS

- Petchra Pra Jom Klao Ph.D. Research Scholarship, KMUTT 2019–2022
- Ph.D. Research Fund, JGSEE 2019–2022
- Research fellowship, KGEO, KMUTT 12/2017–05/2018
- University's Incentive Fellowship 2014, 2015

## CURRENT MANUSCRIPTS

**Nguyen, C. T.***, Noszczyk, T., & Iabchoon, S., 2024. Soil Textures and Urban Heat: Cooling Planning Strategies. Chapter In: Gupta, M., (eds) Remote Sensing for Geophysicists (*ISBN: 9781032778921*). *Taylor & Francis* (*Under reviewing*)

**Nguyen, C. T.***, Loc, T. T., & Tien, P. D., 2024. Land use, land cover changes and expansion of artificial reservoirs in Eastern Thailand: Implications for agriculture and vegetation drought reduction (*Compiling*)

## PUBLICATIONS

*Author's name: Can Trong Nguyen or Nguyen Trong Can; * indicates Correspondence author*

### 2024

**Nguyen, C. T.***, Nguyen H., & Sakti, A. D., 2024. Seasonal Characteristics of Outdoor Thermal Comfort and Residential Electricity Consumption: A Snapshot in Bangkok Metropolitan Area. Remote Sensing Applications: Society and Environment. 33 (Jan 2024), 101106. https://doi.org/10.1016/j.rsase.2023.101106 (Q1, IF 4.7, Scopus, ESCI, 2022)

Diem, P. K., **Nguyen, C. T.***, Diem, N. K., Diep, N. T. H., Thao, P. T. B., Hong, T. G., & Phan, T. N., 2024. Remote sensing for urban heat island research: Progress, current issues, and perspectives. Remote Sensing Applications: Society and Environment. 33 (Jan 2024), 101081 https://doi.org/10.1016/j.rsase.2023.101081 (Q1, IF 4.7, Scopus, ESCI, 2022)

### 2023

**Nguyen, C. T.***, & Chidthaisong A., 2023. Ecosystem Services Provided by Urban Green Spaces in Bangkok Metropolis: Public Awareness and Planning Implications. Urban Ecosystems. https://doi.org/10.1007/s11252-023-01482-1 (Q1, IF 2.9, 2022)

**Nguyen, C. T.***, Kaewthongrach, R., Channumsin, S., Chongcheawchamnan, M., Phan, T.-N., & Niammuad, D., 2023. A regional assessment of ecological environment quality in Thailand special economic zone: Spatial heterogeneous influences and future prediction. Land Degradation & Development, 34(18: SI: *Environmental Governance and Land Degradation Neutrality in Coastal and Transitional Ecosystems*), 5770-5787. https://doi.org/10.1002/ldr.4876 (Q1, IF 4.7, 2022)

Diem, P.K., Diem, N.K., **Nguyen, C.T.**, & Minh V.Q., 2023. Impacts of extreme drought on rice planting calendar in Vietnamese Mekong Delta. Paddy and Water Environment. https://doi.org/10.1007/s10333-023-00958-2 (Q2, IF 2.2, 2022)

### 2022

**Nguyen, C. T.***, Chidthaisong, A., Limsakul, A., Varnakovida, P., Ekkawatpanit, C., Diem, P. K., & Diep, N. T. H., 2022. How do disparate urbanization and climate change imprint on urban thermal variations? A comparison between two dynamic cities in Southeast Asia. Sustainable Cities and Society, 103882. https://doi.org/10.1016/j.scs.2022.103882 (Q1, IF 11.7, 2022)

Diep, N.T.H., **Nguyen C.T.*,** Diem, P.K., Hoang, N.X., & Kafy, A.A., 2022. Assessment on controlling factors of urbanization possibility in a newly developing city of the Vietnamese Mekong delta using logistic regression analysis. Physics and Chemistry of the Earth, Parts A/B/C. 103065. https://doi.org/10.1016/j.pce.2021.103065 (Q2, IF 3.7, 2022)

Diep, N.T.H., Loc, H.H., **Nguyen, C.T.**, Park, E., & Thanh, T., 2022. Spatial-social evaluations of ecosystem services of adaptive aquaculture models using SAR and multivariate analyses: a case in the Vietnamese Mekong Delta. Environmental Monitoring and Assessment, 194(778). https://doi.org/10.1007/s10661-022-10182-w (Q2, IF 3.0, 2022)

Diem, P. K., Diem, N. K., **Nguyen C.T.**, Minh, V. Q., Huong, H. T. T., Diep, N. T. H., & Tao, P. C., 2022. Assessing the applicability of Fusion Landsat-MODIS data for mapping agricultural land use - A case study in An Giang Province. IOP Conference Series: Earth and Environmental Science, 964(1), 012005. https://doi.org/10.1088/1755-1315/964/1/012005

## 2021

**Nguyen C.T.,** Chidthaisong, A., Diem, P.K., & Huo, L., 2021. A Modified Bare Soil Index to Identify Bare Land Features during Agricultural Fallow-Period in Southeast Asia Using Landsat 8. Land 10, 1–17. https://doi.org/10.3390/land10030231 (Q2, IF 3.9, 2022)

**Nguyen C.T.***, Diep, N.T.H., & Iabchoon, S., 2021. Direction of urban expansion in the Bangkok Metropolitan Area, Thailand under the impacts of a national strategy. Vietnam Journal of Earth Sciences. 43. https://doi.org/10.15625/2615-9783/16313 (Q3, Scopus, ESCI)

Yaung, K. La, Chidthaisong, A., Limsakul, A., Varnakovida, P., & **Nguyen C.T.**, 2021. Land Use Land Cover Changes and Their Effects on Surface Air Temperature in Myanmar and Thailand. Sustainability 13, 1–21. https://doi.org/10.3390/su131910942 (Q1/Q2, IF 3.9, 2022)

Loc, H.H., Park, E., Thu, T.N., Diep, N.T.H., & **Nguyen C.T.**, 2021. An enhanced analytical framework of participatory GIS for ecosystem services assessment applied to a Ramsar wetland site in the Vietnam Mekong Delta. Ecosystem Services. 48, 101245. https://doi.org/10.1016/j.ecoser.2021.101245 (Q1, IF 7.6, 2022)

## 2020

**Nguyen C.T.***, Diep, N.T.H., & Diem, P.K., 2020. Factors Affecting Urban Electricity Consumption: a case study in the Bangkok Metropolitan Area using an Integrated approach of Earth Observation data and Data analysis. Environmental Science and Pollution Research. 28, 12056–12066. https://doi.org/10.1007/s11356-020-09157-6 (Q1, IF 5.8, 2022)

Nguyen, T. H. D., **Can, N.T.,** Nguyen, T. N. T., & Doan, T. N. (2020). Flood inundation mapping using Sentinel-1A in An Giang province in 2019. Vietnam Journal of Science, Technology and Engineering, 62(4), 36–42. https://doi.org/10.31276/vjste.62(4).36-42

## 2019

**Can, N.T.***, Diep, N.T.H., Iabchoon, S., Varnakovida, P., & Minh, V.Q., 2019. Analysis of Factors Affecting Urban Heat Island Phenomenon in Bangkok Metropolitan Area, Thailand. VNU Journal of Science: Earth and Environmental Sciences. 35, 53–62. https://doi.org/10.25073/2588-1094/vnuees.4355

Diep, N. T. H., Korsem, T., **Can, N. T.**, Phonphan, W., & Vo Quang Minh., 2019. Determination of aquaculture distribution by using remote sensing technology in Thanh Phu district, Ben Tre province, Vietnam. Vietnam Journal of Science, Technology and Engineering, 61(2), 35–41. https://doi.org/10.31276/VJSTE.61(2).35-41

## 2018

Diep, N.T.H., Loi, N.T., & **Can, N.T.**, 2018. Monitoring erosion and accretion situation in the coastal zone at Kien Giang province, in: The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, GeoInformation for Disaster Management (Gi4DM). Istanbul, Turkey, pp. 197–203. (*Conference*).

## 2017

Loc, H.H., Diep, N.T.H., **Can, N.T.**, Irvine, & K.N., Shimizu, Y., 2017. Integrated evaluation of Ecosystem Services in Prawn-Rice rotational crops, Vietnam. Ecosystem Services. 26, 377–387. https://doi.org/10.1016/j.ecoser.2016.04.007 (Q1, IF 7.6, 2022)

## BOOK CHAPTERS

**Nguyen, C. T.***, Chidthaisong, A., Kaewthongrach, R., & Marome, W., 2023. Urban Thermal Environment Under Urban Expansion and Climate Change: A Regional Perspective from Southeast Asian Big Cities. In: Cheshmehzangi, A., He, BJ., Sharifi, A., Matzarakis, A. (eds) Climate Change and Cooling Cities. Urban Sustainability. Springer, Singapore. https://doi.org/10.1007/978-981-99-3675-5_9

Diem, P.K., Diem, N.K., **Nguyen, C. T.**, & Diep, N.T.H., 2023. Urbanisation and Urban Heat Island in a Mekong Delta City: From Monitoring to Dominant Factors. In: Cheshmehzangi, A., He, BJ., Sharifi, A., Matzarakis, A. (eds) Climate Change and Cooling Cities. Urban Sustainability. Springer, Singapore. https://doi.org/10.1007/978-981-99-3675-5_13

## CONFERENCE PRESENTATIONS

**Nguyen, C. T.**, Chayawatto N., Kubaha K., Chidthaisong A., Varnakovida P., Aregarot P., 2022. Effects of increasing green areas on campus microclimate using InVEST urban cooling model. The 8th International Conference on Sustainable Energy and Environment (SEE). Bangkok, Thailand (7-9/11/2022).

Nguyen, D. K., Phan, D. K., **Nguyen, C.T.**, Kaewthongrach, R., Channumsin, S., Chongcheawchamnan M., 2022. Variations of urban heat island in a coastal city of Hat Yai, Thailand. The 8th International Conference on Sustainable Energy and Environment (SEE). Bangkok, Thailand (7-9/11/2022).

**Nguyen, C. T.***, and Chidthaisong, A., & Kaewthongrach R., 2022. Assessment of cooling capacity by urban parks from a multi-data source approach. The 8th International Conference on Sustainable Urban Development. Binh Duong, Vietnam (20/10/2022). pp.33-46.

**Nguyen, C. T.**, and Chidthaisong, A.*, 2022. Urban Green Space Inventory using Different Spatial Resolution Satellite Images: Practical notes in Bangkok. The 11th International Conference on Environmental Engineering, Science and Management. Bangkok, Thailand. pp. 333-340.

Diep, N.T.H., Loi, N.T., **Can, N.T.**, 2018. Monitoring erosion and accretion situation in the coastal zone at Kien Giang province, in: The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, GeoInformation For Disaster Management (Gi4DM). Istanbul, Turkey, pp. 197–203. (Conference).

Diep, N. T. H., Chi, X. D., and **Can, N. T.**, 2018. Developing an application on land use planning information in Gia Rai district, Bac Lieu province. GeoInformatics for Spatial-Infrastructure Development in Earth & Applied Sciences (GIS-IDEAS), 342–352.

**Nguyen, C. T.**, Nguyen, D. T. H., Chi, T. B., & Ho, H. L., 2017. Ecosystem services valuation and economic approaches for intensive shrimp assessment in Kien Luong district, Kien Giang province. The International Scientific Workshop on "Scientific Research for Training Assignment". Kien Giang, Vietnam. pp. 14–22.

**Can, N. T.**, Diep, N. T. H., & Loc, H. H., 2016. Exploratory Assessment of Prawn-Rice Rotational Crops Spatial Distribution and Ecosystem Services Values. The 37th Asian Conference on Remote Sensing. Sri Lanka.

## LECTURES & INVITED TALKS

- **Invited talk**, "Nexus between Urbanization, Climate change, and Urban Surface Temperature: Evidence in Bangkok and Ho Chi Minh City" at the Workshop on Urbanization and Urban Morphology Modeling focusing on mega urban regions. Munich, Germany (13-14/10/2022).
- **Invited lecture,** "Google Earth Engine: from basic" for master students of Land Management in Can Tho University. Can Tho city, Vietnam (13/03/2022).

- **Presentation**, "Urbanization and Climate change impacts on Urban Heat Island in Bangkok and Ho Chi Minh city" at the 2nd International Ph.D. Students Conference on Environment. Mahidol University, Thailand (05/08/2021).
- **Seminar**, "InVEST – Urban Cooling Model and Applications" at KMUTT Steering Committee for Carbon Neutrality by 2040. KMUTT, Thailand (23/06/2021).
- **Training**, "Mapping Cultural Ecosystem Services using Public Participatory Mapping" at training on Approaches to Evaluating Ecosystem Services. Can Tho University, Vietnam (18/06/2021).

## PROFESSIONAL TRAINING

- 11, 18, 25 Oct 2022: "Accessing and Analyzing Air Quality Data from Geostationary". NASA's Applied Remote Sensing Training (ARSET) Program.
- May - June 2022: "*Bioclimatic Architecture: Principle and Best Practices*". ADEME, DSTE, Ministry of Construction (MOC) in Vietnam with support of Vietnam Energy Efficiency Network (EEN)
- Dec 2019: "*Remote Sensing Land use/cover Change and Climate Impacts in Coastal Zone*". South/Southeast Asia Research Initiative (SARI), Land cover/land use Change Program, NASA, and Prince of Songkla University (Phuket, Thailand).
- Dec 2018: "*R-Statistics*". Nagasaki University and Can Tho University (Can Tho, Vietnam).
- Oct 2018: "*Google Earth Engine Training*". HCMC Institute of Resources Geography and SERVIR-Mekong (HCMC, Vietnam).
- July 2018: "*Water and Its Many Issues: Methods and Cross-cutting analysis.*" Asian Water Platform 2018 - WANASEA (Can Tho, Vietnam).
- Mar 2018: "*GeoServices-4-Sustainability*" - Smart City and GIS for Health modules. University of Salzburg and Nanjing Normal University (Nanjing, China).
- Dec 2016: "*Methods and Practices for Analyzing Local Ecological Knowledge*", Social Science Summer School (SSSS) of SEDES IJL and HCM University of Science (HCMC, Vietnam).
- Nov 2016: "*Stable Isotope Analysis for the Study of Coastal Food Webs: Theory and Practice*", SEDES IJL (HCMC, Vietnam).
- Nov 2016: "*Ecosystem-based Adaptation Approach for Sustainable Management and Governance of Coastal Ecosystems (ENGAGE)*". AITVN (Can Tho, Vietnam).

## PROJECTS

Principal projects participate and contribute to proposal development

| Project | Funder | Duration | Role |
|---|---|---|---|
| Assessing the situation of rural urbanization in the Long Xuyen Quadrangle under the impact of flood prevention dikes | Vietnam National University HCMC | 2024-2025 | Member |
| Assessing Shifting Agriculture Land Use Structure to Adapt to Changes in Flood and Drought-Saline Intrusion Regimes in the Vietnam Mekong Delta | Vietnam National University HCMC | 2024-2025 | Member |
| Securing the food system of Asian mega-deltas for climate and livelihood resilience | IRRI Vietnam | 2023 | Member |

| Project | Funder | Duration | Role |
|---|---|---|---|
| Integrated Assessment of SDGs for Bangkok Metropolitan Region (BMR) and Eastern Economic Corridor (EEC) based on Earth-Observation and Space Technology | CBAS Global SDG Partnership (*AIT-GISTDA collaboration*) | 2022-2025 | Member |
| So COOL KMUTT Plan | KMUTT Steering Committee for Carbon Neutrality by 2040 | 2021 | Leader (1) & Member (1) |
| Can Tho University Improvement Project (2017-2021) | CTU-JICA ODA project | 2017–2021 | Participant* |
| Monitoring the Development and Seasonal calendar of Rice for Forecasting Rice pests | Department of Cultivation and Plant Protection, Vinh Long | 2017 | Participant |
| Solution for Cloud removal on MODIS time to Assess Variations of Rice crop Structures in the Mekong Delta region, Vietnam | Internal CTU | 2017-2018 | Member |
| Impact Assessment of Climate Change on Aquaculture/Fisheries Household Livelihood in the Lower Mekong Delta, Vietnam | SEARCA-SFRT | 2015-2016 | Participant |

* *Proposal Development (03 topics) and Implementation (subproject ODA-E8).*

## PROFESSIONAL SERVICE

**Peer-reviewer**

*Elsevier:* Sustainable Cities and Society; Journal of Applied Earth Observation and Geoinformation; The Egyptian Journal of Remote Sensing and Space Sciences; Environmental Challenges; Heliyon; World Development Sustainability; Advances in Space Research; Urban Climate

*Springer:* Environmental Science and Pollution Research; Theoretical and Applied Climatology

*Springer Nature:* Scientific Reports

*Taylor and Francis:* International Journal of Digital Earth; Geo-spatial Information Science

*MDPI:* Remote Sensing; Sustainability; Atmosphere; Agriculture; Sensors; Land;

*IOP (Institute of Physics):* Environmental Research Letters; Environmental Research: Ecology; Environmental Research Communications

*Others:* TEMA Journal of Land Use, Mobility, and Environment, (ESCI); CTU Journal of Innovation and Sustainable Development (ACI, DOAJ); The 42nd Asian Conference on Remote Sensing (AARS)

**Membership**

International Association for Urban Climate (IAUC)

## COMPUTER SKILLS

**Remote sensing:** ENVI, Ecognition, SNAP, Google Earth Engine (GEE).
**GIS:** ArcGIS, QGIS, MapInfo, Global Mapper.
**Programming and Statistics:** SPSS, R, Google Earth Engine (GEE), Python, arcpy, geemap

## REFERENCES

**Assoc. Prof. Dr. Amnat Chidthaisong**, [Vice Director]
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King Mongkut's University of Technology Thonburi, Thailand
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