Curriculum Vitae
Tzu-Hsin Karen Chen

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EDUCATION

2017 – 2020 **PhD in Environmental Science**, Aarhus University

2014 – 2016 **MSc in Geography**, National Taiwan University

2010 – 2014 **BSc in Geography,** National Taiwan University (NTU)

PROFESSIONAL APPOINTMENTS

2021 – present **Postdoctoral researcher**, School of Environment, Yale University

2020 – 2020 **Co-teaching lecturer**, Dept. of Geosciences and Natural Resource Management, University of Copenhagen (UCPH).

2017 – 2020 **PhD fellow**, Danish Big Data Centre for Environment and Health, Aarhus University.

2014 – 2017 **Research and Teaching Assistant**, Dept. of Geography, NTU.

2015 – 2016 **Research Assistant**, Institute of Environmental Changes, Academia Sinica.

RESEARCH INTERESTS

Urbanization impacts
Nature hazard and vulnerability
Environmental epidemiology
GIS, remote sensing, and machine learning

AWARDS AND HONORS

2020 **Distinguished Contribution** to cutting-edge research, Ladies of Landsat.

2020 **LAND Travel Award**. Travel scholarship for outstanding PhD project in land science.

2018 **First Place, Best Paper Award**, Global Land Program Asia Conference.

2017 **Outstanding Master Thesis**, Taiwan Geographic Information Society.

2014 **The Dean's Award**, College of Science, NTU.

2013 **First Place, Proposal Competition**, Environmental Remote Sensing Workshop.

2011, 2013 **President's Award**, Dept. of Geography, NTU.

GRANTS AND FELLOWSHIPS

2021-2023 **Gaylord Donnelley Environmental Postdoctoral Fellowship**. Yale Institute for Biospheric Studies. ($134,000)

2020 **Young Scholars Grant**. International Geographical Union Urban Geography Commission. ($150)

2018-2020 **PhD Fellowship** for environmental health studies, Novo Nordisk Foundation Challenge Programme. ($58,000)

2017-2020 **PhD Fellowship**, School of Science and Technology, Aarhus University. ($83,000)

2017-2019 **PhD Scholarship** in the field of climate change and disaster adaptation technology, Ministry of Education, Taiwan. ($126,000)

2015 **Infectious Diseases Research Scholarship**, Ministry of Health and Welfare, Taiwan. ($700)

TEACHING

Master's level 2019, 20	**Remote Sensing in Land Science Studies**, lecturer (material development, lectures, exercises), co-teaching with Alexander Prishchepov, IGN, UCPH.
2017	**Geographic Information Systems**, Guest lecturer for Tessa Kate Anderson, National Space Institute, Danish Technical University.
Bachelor's level 2014, 15, 16	**Cartography**, teaching assistant, Geography, National Taiwan University.
2014, 15, 16	**Research Methods in Geography**, teaching assistant, Geography, NTU.
2014,15	**Local and Regional Development**, teaching assistant, Geography, NTU.
2013, 14	**Quantitative Geography**, teaching assistant, Geography, NTU.
Supervision 2021	**MSc publication writing**: Jack Rusk. Multi-hazard Susceptibility in the Hindu Kush Himalayas. School of Environment, Yale University.
2020	**MSc thesis**: Nico Kimi Kalevi Valtonen. Urban dynamics and transition of function zones: cases of Finnish and Russian cities in Karelia (ongoing). Geography and Geoinformatics, UCPH.
2020	**MSc thesis**: Alexander Michael Shields. The suitability of NTL time-series to assess sociopolitical transformations (ongoing). Geography and Geoinformatics, UCPH.
2019	**MSc thesis**: Vasiliki Kotoglou. The spatial analysis of urban design and mental health. National Space Institute, DTU.

ACADEMIC SERVICES

Reviewer	*Cities* (SSCI): 2018 (1); *Natural Hazards* (SCIE): 2020 (1); *Plos One*: 2020 (2)
Student representation	**Member of Ph.D. Student Committee**, Department of Environmental Science, Aarhus University, 2018-19.
	Chair of Graduate Student Association, Department of Geography, NTU, 2015-16.
	Head of Academic Section, Undergraduate Student Association, Department of Geography, NTU, 2012-13.
Teaching training services	**Consultant for Teaching Assistants**, Center for Teaching and Learning Development, NTU, 2015-16.
	Originator, Teaching Assistant Training Workshop, Department of Geography, National Taiwan University, 2015.

INTERNATIONAL NETWORK

European collaborators	**Dept. of Geosciences and Natural Resource Management**, University of Copenhagen. Prof. A. Prishchepov, Prof. R. Fensholt, & Dr. X. Lopez (paper ,teaching, and supervision collaboration), 2018-present.
	Dept. of Computer Science, University of Copenhagen. Prof. F. Gieseke & Dr. Oehmcke (paper and supervision collaboration), 2019-present.
	Dept. of EO Data Science (IMF), Technical University of Munich, Prof. Xiaoxiang Zhu, Dr. Schmitt, M. & Dr. Chunping Qiu (paper collaboration), 2019-present.
	Stockholm Resilience Centre, Stockholm University. Prof. S. Barthel & K. Samuelsson (paper and proposal collaboration), 2018-present.
	Big Data Centre for Environment and Health, Aarhus University, Prof. C. Sabel, Prof. C. Pedersen, Dr. H. Horsdal (paper, book, and supervision collaboration 2017-present).
Global South collaborator	Prof. L. Acosta, University of the Philippines in Los Banos (field work collaboration, 2015).
Asian collaborators	Dept. of Geography, NTU. Prof. T. Wen & R. Chuang (book and paper collaboration), 2016-2018.
North American collaborator	Ass. Prof. P. Geldsetzer, Medicine School, Stanford University (proposal collaboration).

PUBLICATIONS (*corresponding author)

Peer-reviewed journal articles

Rusk, J., Maharjan, A., Tiwari, P., **Chen, T. H. K.**, Shneiderman, S., Turin, M., and Seto, K. C. (2022) Multi-hazard susceptibility and exposure assessment of the Hindu Kush Himalaya. Science of the Total Environment, 251, 112096. (SCIE, Impact Factor: 7.963)

Perez-Sindin, X. S., **Chen, T. H. K.**, and Prishchepov, A. (2021) Are night-time lights a good proxy of economic activity in rural areas in middle and low-income countries? Examining the empirical evidence from Colombia. Remote Sensing Applications: Society and Environment, 100647. (ESCI)

Chen, T.H.K.*, Qiu, C., Schmitt, M., Zhu, X.X., Sabel, C.E., and Prishchepov, A.V. (2020) Mapping horizontal and vertical urban densification in Denmark with Landsat time-series from 1985 to 2018: a semantic segmentation solution. Remote Sensing of Environment, 251, 112096. (SCI, Impact Factor: 10.164)

Samuelsson, K.*, **Chen, T.H.K.**, Antonsen, S., Brandt, S.A., Sabel, C.E., and Barthel, S. (2020) Residential environments across Denmark have become both denser and greener over 20 years. Environmental Research Letters, 16(1). (SCI, Impact Factor: 6.096)

Qiu, C., Schmitt, M., Geiß, C., **Chen, T.H.K.**, and Zhu, X.X.* (2020) A framework for large-scale mapping of human settlement extent from Sentinel-2 images via fully convolutional neural networks. ISPRS Journal of Photogrammetry and Remote Sensing, 163, 152-170. (EI, Impact Factor: 7.319)

Chen, T.H.K.*, Prishchepov, A.V., Fensholt, R., and Sabel, C.E. (2019) Detecting and monitoring long-term landslides in urbanized areas with nighttime light data and multi-seasonal Landsat imagery across Taiwan from 1998 to 2017. Remote Sensing of Environment, 225, 317-327. (SCI, Impact Factor: 10.164)

Chen, T.H.K., Chen V.Y.J., and Wen, T.H.* (2018) Revisiting the role of rainfall variability and its interactive effects with the built environment in urban dengue outbreaks. Applied Geography, 101, 14-22. (SSCI, Impact Factor: 3.508)

Chen, T.H.K., and Lin, K.H.* (2018) Distinguishing windthrow and hydrogeological effects of typhoon impacts on agricultural lands: an integrative OBIA and PPGIS approach. International Journal of Remote Sensing, 39(1), 131-148. (SCI, Impact Factor: 2.976)

Chen, T.H.K., Wen Z.H.*, Fang C.T., and Chan P.C. (2017) Assessing infection risk of Tuberculosis (TB) contacts in different case-contact contexts. Taiwan Journal of Public Health. 36(2), 107-122.

Peer-reviewed proceeding article

Oehmcke, S.*, **Chen, T.H.K.**, Prishchepov, A.V., Gieseke, F. (2020) Towards creating cloud-free satellite imagery with deep learning. Proceedings of the 9th ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data, 3, 1-10.

Book chapters

Sabel, C.E., Amegbor, P.M., Zhang, Z., **Chen, T.H.K.**, Poulsen, M.B., Hertel, O., Sigsgaard, T., Horsdal, H.T., Pedersen, C.B., Khan, J. (2021). Health and Wellbeing. In Ed., Shi, W., Goodchild, M., Batty, M., Kwan, M.P., Zhang, A: Urban Informatics. Heidelberg: Springer.

Wen, T.H., Liao, H.Y., Yang, K.L., **Chen, T.H.K.** (2021) Characterizing after-rain standing waters in urban built environments through a multilevel image analysis. In Ed., Yang. X: Urban Remote Sensing: Monitoring, Synthesis and Modeling in the Urban Environment (2nd Edition). Hoboken: Wiley-Blackwell.

Wen, T.H., **Chen, T.H.K.** (2016). Risk assessment and adaptation to dengue fever under climate change. In Ed., Chou, K.T., Lin, J.C.: Sustainable development under climate change in Taiwan. Taipei: NTU.

Under review / in preparation

Chen, T.H.K.* and Seto, C.K. Gender and authorship patterns in urban land science. Journal of Land Use Science. (Minor revision)

Chen, T.H.K.*, Samuelsson, K., Horsdal, T.H., Closter, A.M., Barthel, S., Pedersen, C.B., Davies, M.E., Prishchepov, A.V., and Sabel, C.E. Three-dimensional urban structure and residential mobility correlate with the risk of developing mental disorders: a follow-up study. (Pre-print in the thesis)

Chen, T.H.K.*, Seto, C.K., and Pandey, B. Characterizing small-scale urbanization at subpixel level in mountain regions using deep learning. (In preparation)

Chen, T.H.K.*, Rusk, J., and Seto, C.K. Increasing hazard exposure driven by small-scale urbanization in the Hindu Kush Himalaya. (In preparation)

Fong, K., Chen, T.H.K., and Bell, M. How do remote sensing methods potentially cause biased interpretations of greenness effects in environmental epidemiology? (In preparation).

Selected conference papers and presentations

Chen, T.H.K. (2021) From pixel to people: 3-D urban form and mental health. Yale Institute of Biospheric Studies, New Haven, 27 November.

Chen, T.H.K., Samuelsson, K., Prishchepov, A.V., and Sabel, C.E. (2020) Linking migration trajectory and urban dynamics: densification impacts on mental health. IGU Urban Geography Commission Annual Meeting, Online, 24-27 Aug. (**Young Scholars Grant**)

Chen, T.H.K., Sabel, C., and Prishchepov, A. (2019) A lifecourse exposure to urban density and high-rise building: empirical findings for psychiatric disorders. International Conference on Urban Health. Xiamen, 4-8 Nov.

Chen, T.H.K., Sabel, C., and Prishchepov, A. (2019) Changing urban density of Denmark in the past 20 years over horizontal and vertical scales. Nordic Remote Sensing Conference. Aarhus, 17-19 Sep.

Chen, T.H.K., Sabel, C., and Prishchepov, A. (2019) Detecting time-series horizontal and vertical building density at neighborhood scales with open access remote sensing data. esa Living Planet Symposium, Milan, 13-17 May.

Chen, T.H.K., Sabel, C., and Prishchepov, A. (2018) From pixel to people: satellite imagery in support of urban health studies. Urban Transitions, Sitges, 25-27, Nov.

Chen, T.H.K., Prishchepov, A., Fensholt, R., and Sabel, C. (2018) Combining open source time-series satellite data sets to automatically map landslide land cover across Taiwan 1998-2017. Global Land Programme Asia Conference, Taipei, 3-5, Sep. **(Best Paper Award)**

Wen, T.H. and **Chen, T.H.K.** (2017) Integrating high spatial resolution weather radar data and urban imagery for modeling micro-scale dengue risk. European Geosciences Union General Assembly, Vienna, 8-13 Apr.

Chen, T.H.K. and Wen, T.H. (2016) Exploring the Variability of Most Suitable Temperature Range for Epidemiological Characteristics of Dengue Dynamics: A Multi-level Growth Modeling Analysis. Annual Meeting of the Association of American Geographers, San Francisco, 29 Mar. – 2 Apr.

Chen, T.H.K. and Lin K.H. (2015). Object-based Classification of Land Impact under Typhoon Pablo in Compostela Valley, Mindanao. The 36th Asian Conference on Remote Sensing, Manila, 24-28 Oct.

Invited talks

Chen, T.H.K. (2020) Historical data on urban form and green space. Interdisciplinary Collaboration Meeting, Aarhus University, 25 June.

Chen, T.H.K. (2020) Linking migration and urban dynamics: impacts on mental health. Environment and Society Meeting, University of Copenhagen, Copenhagen, 29 May.

Chen, T.H.K. (2019) Detecting long-term urban densification with a remote sensing and deep learning approach. Strategic Grows Area (SGA) Seminar, Aarhus University, Roskilde, 4, Oct.

Chen, T.H.K. (2019) Detecting time-series horizontal and vertical building density at neighborhood scales with open access remote sensing data. GEOMED 2019 Conference, Glasgow, 27-29 Aug.

Chen, T.H.K. (2019) From pixel to people: earth observation in support of sustainable urbanization, German Aerospace Center (DLR), Munich, 9 July.

Chen, T.H.K. (2019) Combining Open Source Time-series Satellite Data Sets to Automatically Map Landslide Land Cover across Taiwan 1998-2017. Remote Sensing Seminar, University of Copenhagen, Copenhagen, 3 May.

Chen, T.H.K. (2018) BIG Satellite Data, Health, and Urban Studies. Invited to AU big data talk. Aarhus University, Aarhus C, 6 Nov.

Chen, T.H.K. (2018) From Pixel to People: Satellite Data in Support of Urban Health Studies. Collaborative Public Health Seminar with the Chinese University of Hong Kong, National Taiwan University, Taipei, 21 Dec.