*Curriculum Vitae* of Kwok Pan Chun

Department of Geography and Environmental Management, School of Architecture and Environment, College of Arts, Technology and Environment (CATE), University of the West of England (UWE), Bristol, UK

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**Present academic position:**

2022-present Lecturer, University of the West of England, Bristol, UK

2016-present Adjunct Professor, University of Saskatchewan, Canada

**Previous academic position held:**

2015-2022 Assistant Professor, Hong Kong Baptist University

2011-2015 Post-Doctoral Fellow, University of Saskatchewan, Canada

2006-2007 Research Associate, the Hong Kong Polytechnic University

**Academic qualifications:**

2011, PhD, Imperial College London, UK; 2006, MSc (Distinction), Imperial College London, UK; 2002, BEng (First Class), The University of Hong Kong

**Previous relevant research work:**

My main research interests include artificial intelligence (AI) studies for urban environmental change and hydrological risk in Asia and Africa; spatial approaches for multiscale time series classification in Canada and the UK; energy community studies based on big data analytics and a chatbot for a low-carbon transition in Hong Kong; pattern learning for the mesoscale numerical modelling simulations using kilometre-scale land use representation in Europe and North America; and visualization for natural hazards in South American cities. My research translates climate change output related to urban environments based on scaling relationships. I study energy security based on climate change scenarios in global cities including Singapore and Hong Kong. I have extensive international research experience in atmosphere modelling using high-performance computing facilities, collaborating with institutions such as the University of Illinois, US National Center for Atmospheric Research (NCAR), the Eurasia Institute of Earth Sciences, and the University of Rouen. My work focuses on generating innovative blue and green infrastructure solutions in cities for flooding risks in the UK and Northwest Europe. With a background in urban climate simulations and art-based approaches, I contribute to projects on Water and Energy Futures, community resilience, and climate change impacts on urban environments. Additionally, I actively support Equity, Diversity, and Inclusion (EDI) initiatives, aiding in funding applications and community resourcing to improve urban accessibility, visibility, and intelligibility.

**Selected Appointment/Professional Service/Awards:**

Member in the regional Asian Low-Carbon Universities-Cities Network (ALUN)

Member in the urban work group for the community of South America Affinity Group (SAAG), the US National Center for Atmospheric Research (NCAR)

Member in ENERGISE West - Enabling Networks for Energy Research and Generation via Informal Social Exchange in the West of England, Bristol

Member in the International Association Hydrological Society (IAHS) Science for solutions: Hydrology Engaging Local People IN one Global world (HELPING) Working Groups: “Hydrologic Design: Solutions and Communications” and “Water systems analysis for integrated planning and management”

Member in the European Coordinated Regional Climate Downscaling experiment (EURO-CORDEX) for the Weather Research & Forecasting (WRF) modelling system as a regional climate model (RCM)

Cluster Leader in the Energy and Climate cluster of the Asian Energy Studies Centre (AESC)

Group leader in the Theme C (compound risks) work group for the UNESCO EURO FRIEND-Water Project-3 on Large Scale Variations in Hydrological Characteristics.

Vice Chancellor's Challenge Fund (CF) Awardee (2023-2025), "VIS-Studio: An Immersive Reality and AI solution for data visualisation to support collaborative decision-making for extreme weather and disaster scenarios"

Vice Chancellor's Accelerator Programme Awardee (2022‐2024), "Convection-permitting models for environmental management in urban and green & blue spaces"

CATE College Building Research Fund Awardee (2022-2023), "Downstream UK pilot: Bringing local knowledges into decision-making in water security through participatory Forum Theatre methods"

The 2011 Keith Runcorn Travel Award for the EGU General Assembly

**Ongoing Projects:**

PI, 2022/24 IEC\NSFC\223132 - International Exchanges 2022 Cost Share (NSFC), the Royal Society: “Hot and Dry: the critical spatiotemporal impacts of compound extremes on vegetation in mid-latitude Eurasia”.

Co-PI, Research Impact Fund (2021-2023): “Exploring the role of big data analytics in promoting smart low-carbon cities: A human-centered, community-based, and deep engagement approach in Hong Kong” (R2002-20F)

**Representative publications records in last five years:**

(1) **Chun, K.P.**, Dieppois, B., He, Q., Sidibe, M., Eden, J., Paturel, J.E., Mahé, G., Rouché, N., Klaus, J. and Conway, D., 2021. Identifying drivers of streamflow extremes in West Africa to inform a nonstationary prediction model. Weather and Climate Extremes, 33, p.100346.

(2) Dieppois, B., Capotondi, A., Pohl, B., **Chun, K.P.**, Monerie, P.A. and Eden, J., 2021. ENSO diversity shows robust decadal variations that must be captured for accurate future projections. Communications Earth & Environment, 2(1), pp.1-13.

(3) Fan, P.Y., **Chun, K.P.**, Mijic, A., Mah, D.N.Y., He, Q., Choi, B., Lam, C.K.C. and Yetemen, O., 2022. Spatially-heterogeneous impacts of surface characteristics on urban thermal environment, a case of the Guangdong-Hong Kong-Macau Greater Bay Area. Urban Climate, 41, p.101034.

(4) Fan, P.Y., **Chun, K.P.**, Mijic, A., Tan, M.L. and Yetemen, O., 2022. Integrating the Budyko framework with the emerging hot spot analysis in local land use planning for regulating surface evapotranspiration ratio. Journal of Environmental Management, 316, p.115232.

(5) Hamel, P., Riveros‐Iregui, D., Ballari, D., Browning, T., Célleri, R., Chandler, D., **Chun, K.P.**, Destouni, G., Jacobs, S., Jasechko, S. and Johnson, M., 2018. Watershed services in the humid tropics: Opportunities from recent advances in ecohydrology. Ecohydrology, 11(3), p.e1921.

(6) He, Q., Xu, B., Dieppois, B., Yetemen, O., Sen, O.L., Klaus, J., Schoppach, R., Çağlar, F., Fan, P.Y., Chen, L., Danaila, L., Massei, N. and **Chun, K.P.**, 2022. Impact of the North Sea–Caspian pattern on meteorological drought and vegetation response over diverging environmental systems in western Eurasia. Ecohydrology, 15(5), p.e2446.

(7) He, Q., **Chun, K.P.**, Dieppois, B., Chen, L., Fan, P.Y., Toker, E., Yetemen, O. and Pan, X., 2022. Investigating and predicting spatiotemporal variations in vegetation cover in transitional climate zone: a case study of Gansu (China). Theoretical and Applied Climatology, 150(1-2), pp.283-307.

(8) Lam, C.K.C., He, Q., Cheng, K.L., Fan, P.Y., **Chun, K.P.**, Choi, B., Mah, D.N.Y., Cheung, D.M.W., Lo, K. and Yetemen, O., 2022. Impact of climate change and socioeconomic factors on domestic energy consumption: The case of Hong Kong and Singapore. Energy Reports, 8, pp.12886-12904.

(9) Li, G., Choi, B., Xu, J., Bhowmick, S.S., **Chun, K.P.** and Wong, G.L.H., 2021, May. Shapenet: A shapelet-neural network approach for multivariate time series classification. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 35, No. 9, pp. 8375-8383).

(10) Li, G., Choi, B., Bhowmick, S.S., Wong, G.L.H., **Chun, K.P.** and Li, S., 2020, October. Visualet: visualizing shapelets for time series classification. In Proceedings of the 29th ACM International Conference on Information & Knowledge Management (pp. 3429-3432).

(11) Li, G., Choi, B., Xu, J., Bhowmick, S.S., **Chun, K.P.** and Wong, G.L.H., 2020. Efficient shapelet discovery for time series classification. IEEE transactions on knowledge and data engineering, 34(3), pp.1149-1163.

(12) Schoppach, R., **Chun, K.P.** and Klaus, J., 2023. Allometric relations between DBH and sapwood area for predicting stand transpiration: Lessons learned from the Quercus genus. European Journal of Forest Research, pp.1-13.

(13) Srivastava, A., Yetemen, O., Saco, P.M., Rodriguez, J.F., Kumari, N. and **Chun, K.P.**, 2022. Influence of orographic precipitation on coevolving landforms and vegetation in semi‐arid ecosystems. Earth Surface Processes and Landforms, 47(12), pp.2846-2862.

(14) Tew, Y.L., Tan, M.L., Juneng, L., **Chun, K.P.**, Hassan, M.H.B., Osman, S.B., Samat, N., Chang, C.K. and Kabir, M.H., 2022. Rapid Extreme Tropical Precipitation and Flood Inundation Mapping Framework (RETRACE): Initial Testing for the 2021–2022 Malaysia Flood. ISPRS International Journal of Geo-Information, 11(7), p.378.

(15) Yang, P., Lu, M., Tang, K.W., Yang, H., Lai, D.Y., Tong, C., **Chun, K.P.**, Zhang, L. and Tang, C., 2021. Coastal reservoirs as a source of nitrous oxide: Spatio-temporal patterns and assessment strategy. Science of The Total Environment, 790, p.147878.

**Representative interdisciplinary publications:**

(1) **Chun, K.P.**,Mamet, S.D., Metsaranta, J., Barr, A., Johnstone, J. and Wheater, H., 2017. A novel stochastic method for reconstructing daily precipitation times-series using tree-ring data from the western Canadian Boreal Forest. Dendrochronologia, 44, pp.9-18.

(2) Deanna, R., Merkle, B.G., **Chun, K.P.**, Navarro-Rosenblatt, D., Baxter, I., Oleas, N., Bortolus, A., Geesink, P., Diele-Viegas, L., Aschero, V. and de Leone, M.J., 2022. Community voices: the importance of diverse networks in academic mentoring. Nature Communications, 13(1), pp.1-7.

(3) Dominguez, F., Rasmussen, R., Liu, C., Ikeda, K., Prein, A., Varble, A., …Schneider, T. (2023). Advancing South American water and climate science through multi-decadal convection-permitting modeling. Bulletin of the American Meteorological Society

(4) Evaristo, J., Jameel, Y. and **Chun, K.P.**, 2021. Implication of stem water cryogenic extraction experiment for an earlier study is not supported with robust context-specific statistical assessment. Proceedings of the National Academy of Sciences, 118(17).

(5) Fan, P.Y., **Chun, K.P.**, Mijic, A., Tan, M.L., Liu, M.S. and Yetemen, O., 2022. A framework to evaluate the accessibility, visibility, and intelligibility of green-blue spaces (GBSs) related to pedestrian movement. Urban Forestry & Urban Greening, 69, p.127494.

(6) Fan, P. Y., **Chun, K. P.**, Tan, M. L., Mah, D., Mijic, A., Strickert, G., and Yetemen, O. (2023). The spatial configuration of local climate zones reveals effects on wayfinding in human walking. PLoS ONE, 18(9), e0289780.

(7) Fan, P. Y. and **Chun, K. P.**, 2022. An adaptive legal framework for water security concerns in the Guangdong-Hong Kong-Macao Greater Bay Area. In The Cambridge Handbook of Disaster Law and Policy (131-148). Cambridge University Press.

(8) Gober, P.A., Strickert, G.E., Clark, D.A., **Chun, K.P.**, Payton, D. and Bruce, K., 2015. Divergent perspectives on water security: bridging the policy debate. The Professional Geographer, 67(1), pp.62-71.

(9) Kumari, N., Saco, P.M., Rodriguez, J.F., Johnstone, S.A., Srivastava, A., **Chun, K.P.** and Yetemen, O., 2020. The grass is not always greener on the other side: Seasonal reversal of vegetation greenness in aspect‐driven semiarid ecosystems. Geophysical Research Letters, 47(15), p.e2020GL088918.

(10) Strickert, G., **Chun, K.P.**, Bradford, L., Clark, D., Gober, P., Reed, M.G. and Payton, D., 2016. Unpacking viewpoints on water security: lessons from the South Saskatchewan River Basin. Water Policy, 18(1), pp.50-72.

(11) Maraun, D., Wetterhall, F., Ireson, A.M., Chandler, R.E., Kendon, E.J., Widmann, M., Brienen, S., Rust, H.W., Sauter, T., Themeßl, M., Venema, V.K.C., **Chun, K.P.**, Goodess, C.M., Jones, R.G., Onof, C., Vrac M., and Thiele-Eich I. 2010. Precipitation downscaling under climate change: Recent developments to bridge the gap between dynamical models and the end user. Reviews of Geophysics, 48(3).

(12) Mijic, A., Liu, L., O’Keeffe, J., Dobson, B., and **Chun, K. P.**, 2023. A meta-model of socio-hydrological phenomena for sustainable water management. Nature Sustainability.

(13) Mockler, E.M., **Chun, K.P.**, Sapriza-Azuri, G., Bruen, M. and Wheater, H.S., 2016. Assessing the relative importance of parameter and forcing uncertainty and their interactions in conceptual hydrological model simulations. Advances in Water Resources, 97, pp.299-313.

(14) Wemple, B.C., Browning, T., Ziegler, A.D., Celi, J., **Chun, K.P.**, Jaramillo, F., Leite, N.K., Ramchunder, S.J., Negishi, J.N., Palomeque, X. and Sawyer, D., 2018. Ecohydrological disturbances associated with roads: Current knowledge, research needs, and management concerns with reference to the tropics. Ecohydrology, 11(3), p.e1881.

(15) Wright, C., Kagawa‐Viviani, A., Gerlein‐Safdi, C., Mosquera, G.M., Poca, M., Tseng, H. and **Chun, K.P.**, 2018. Advancing ecohydrology in the changing tropics: Perspectives from early career scientists. Ecohydrology, 11(3), p.e1918.