Ze JIANG

Ph.D. Candidate

Water Research Center, University of New South Wales (UNSW), Sydney, Australia

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PROFILE

- Highly self-motivated researcher with demonstrated research expertise modeling hydro-climatology processes.
- Strong interpersonal skills with a good sense of teamwork.
- Programming Skills: R, C/C++, and Python in both Unix and Windows systems.
- Rich experience in modeling and GIS, using MIKE, SWMM, DSSAT, and QGIS.

EDUCATION

University of New South Wales, Australia
2018 – June 2021 (expected)
Ph.D. in Water Resources Engineering
UNSW UIPA Scholarship

Erasmus Mundus Joint M.Sc. Degree
Newcastle University (UK)
Brandenburg University of Technology (DE)
University of Nice-Sophia Antipolis (FR)
2013 – 2015
EuroAquae - HydroInformatics and Water Management
GPA: 17.16/20, Awarded Excellent Graduate
European Erasmus Mundus Scholarship

Hohai University, Nanjing, China
2008 – 2012
B.Sc. in Environmental Engineering
GPA: 4.62/5.0, Awarded Most Outstanding Graduate

RESEARCH INTEREST

- Wavelet-based time series decomposition and transformation
- Hydro-climatological modelling and forecasting
- Climate change impact on the water cycle (e.g., floods and droughts)

PROFESSIONAL EXPERIENCE

TMSI (Tropical Marine Science Institute), National University of Singapore, Singapore **(Nov. 2015 – Feb.2018)** **Research Engineer**

- DSSAT crop modeling of future rice yield in Vietnam under climate change, Singapore-MIT Alliance project.
- Development of index-based drought insurance for sovereign disaster risk transfer, World Bank project.
- Impact of climate change on inland and coastal flooding in Singapore, Public Utilities Board (PUB) project.
- Effectiveness of ABC Waters design features in residential developments, PUB-TMSI-Monash University project.

Ingenieurgesellschaft Prof. Dr. Sieker mbH, Berlin, Germany **(Mar. 2015- Sep. 2015)** **Intern**

- Involvement in a project in Saudi Arabia on flood modeling and mitigation of Hafar Al-Batin city.
- Development of a Time-Area Function Model based on QGIS environment for stormwater management.

PUBLICATIONS: https://scholar.google.com/citations?user=4iVouPYAAAAJ&hl=en

Selected Journal Publications

1. Jiang, Z., Sharma, A., & Johnson, F. (2021). Variable transformations in the spectral domain – Implications for hydrologic forecasting. submitted to ***Journal of Hydrology***, under review.
2. Kusumastuti, C., Jiang, Z., Mehrotra R., & Sharma, A. (2021). A signal processing approach to correct systematic bias in trend and variability in climate model simulations. submitted to ***Geophysical Research Letters***, undergoing revisions following review.
3. Jiang, Z., Rashid, M. M., Johnson, F., & Sharma, A. (2020). A wavelet-based tool to modulate variance in predictors: An application to predicting drought anomalies. ***Environmental Modelling & Software***, 104907.
4. Hohl, R., Jiang, Z., Tue Vu, M., Raghavan, S. V., & Liong, S. Y. (2020). Using a regional climate model to develop index-based drought insurance for sovereign disaster risk transfer. ***Agricultural Finance Review***, 81(1), 151-168.
5. Jiang, Z., Sharma, A., & Johnson, F. (2020). Refining Predictor Spectral Representation Using Wavelet Theory for Improved Natural System Modeling. ***Water Resources Research***, 56(3), e2019WR026962.
6. Jiang, Z., Sharma, A., & Johnson, F. (2019). Assessing the sensitivity of hydro-climatological change detection methods to model uncertainty and bias. ***Advances in Water Resources***, 134, 103430.
7. Jiang, Z., Raghavan, S. V., Hur, J., Sun, Y., Liong, S.-Y., Nguyen, V. Q., & Van Pham Dang, T. (2019). Future changes in rice yields over the Mekong River Delta due to climate change - Alarming or alerting? ***Theoretical and Applied Climatology***, 137(1), 545-555.

TALKS

1. Jiang, Z., Sharma, A., & Johnson, F. (2020). Hydro-climatological forecasting: A view from the spectral domain. In ***AGU Fall Meeting 2020***. AGU, Oral presentation, Online, San Francisco, CA, USA, 15 December 2020.
2. Sharma, A., Jiang, Z., and Johnson, F. (2020). Forecasting drought revisited - the importance of spectral transformations to dominant atmospheric predictor variables, ***EGU General Assembly 2020***, Invited talk, Online, 4-8 May 2020, EGU2020-12334.
3. Jiang, Z., Sharma, A., & Johnson, F. (2019). Refining predictor spectral representation using wavelet theory for improved natural system modelling, 23rd International Congress on Modelling and Simulation (***MODSIM***), Oral presentation, Canberra, Australia, 6 December 2019.
4. Jiang, Z., Sharma, A., & Johnson, F. (2019). Drought prediction for improved water resource management: A wavelet-based system prediction approach, ***STAHY 2019***, Oral presentation, Nanjing, Jiangsu, China, 20 October 2019.
5. Jiang, Z., Sharma, A., & Johnson, F. (2018). Assessing the impact of systematic biases in detection of hydrologic change across Australia, ***STAHY 2018***, Oral presentation, Adelaide, South Australia, Australia, 18 September 2018.
6. Jiang, Z., Raghavan, S. V., Hur, J., Sun, Y., & Liong, S.-Y. (2017). Impacts of Climate Change on Rice Crop Yields in Vietnam, ***Asia Oceania Geosciences Society (AOGS) 2017***, Oral presentation, Singapore, 11 August 2017.

BOOK CHAPTERS

1. Raghavan, S. V., Ze, J., Hur, J., Jiandong, L., & Ngoc, N. (2019). ASEAN Food Security under the 2 C-4 C Global Warming Climate Change Scenarios. In V. Anbumozhi, M. Breiling, & V. Reddy (Eds.), Towards a Resilient ASEAN: Disasters, Climate Change, and Food Security: Supporting ASEAN Resilience (Vol. 1, pp. 37-52). Jakarta, Indonesia: Economic Research Institute for ASEAN and East Asia.
2. Kim, D., Sun, Y., Wendi, D., Jiang, Z., Liong, S.-Y., & Gourbesville, P. (2018). Flood modelling framework for Kuching City, Malaysia: overcoming the lack of data. In Advances in Hydroinformatics (pp. 559-568): Springer, Singapore.

REFEREES

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My joint supervisor for my Ph.D. at UNSW

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Deputy Director (2008 – Aug 2019), Tropical Marine Science Institute, National University of Singapore
Founding member and Treasurer of Asia Water Council (2016 – present)
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My supervisor for Research Engineer roles at the National University of Singapore

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