# Mark K. Wang（王凯章）

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Center for Water and the Environment, J.J. Pickle Research Campus, Austin, TX

## Education

**The University of Texas at Austin** — Austin, TX
*Doctor of Philosophy* | Civil Engineering — *Expected May 2026*
*Master of Science* | Environmental and Water Resources Engineering — *May 2022*

**Columbia University** — New York, NY
*Bachelor of Science* | Civil Engineering | Water Resources Concentration — *May 2016*

**Franklin & Marshall College** — Lancaster, PA
*Bachelor of Arts* | Cognitive Science | Music Minor — *May 2016*

## Research Experience

**National Weather Service | NOAA | CUAHSI** — Tuscaloosa, AL
*2023 Summer Institute Course Coordinator* — *June 2023 – July 2023*

- Supported 23 fellows researching flood prediction at the National Water Center
- Compiled and edited final report documenting six group projects
- Planned institute's seven week timeline with faculty theme leaders and CUAHSI staff

*2022 Summer Institute Fellow* — *June 2022 – July 2022*

- Developed a GIS method for coupling riverine & coastal inundation

**Fulbright Program, U.S. Department of State** — Zhuhai & Shenzhen, China
*Research Grantee* — *June 2019 – Feb 2020*

- Studied low-impact development and stormwater management policy in the Pearl River Delta

## Professional Experience

**Water Utility, City of Austin** — Austin, TX
*Systems Planning Engineering Intern* — *Mar 2020 – Sep 2020*

- Automated storm event and sewer peak flow analysis with Python scripts
- Maintained GIS databases for long-range water infrastructure planning

**Mease Engineering, P.C.** — Quakertown, PA
*Civil Engineer* — *Oct 2017 – June 2019*

- Performed hydrologic site analyses under pre- and post-development conditions
- Designed stormwater management systems to control water quality and flow rate

**NYC Department of Environmental Protection** — New York, NY
*Assistant Civil Engineer* — *June 2016 – Oct 2017*

- Managed green stormwater infrastructure projects in public parks and streets
- Developed and reviewed construction drawings and contract specifications

## Publications

5. Murphy, S., **Wang, M.**, Cheng, C.-S., Passalacqua, P., & Leite, F. (2025). Land-use analysis using infrastructure representations and high-resolution flood inundation mapping techniques. *International Journal of Disaster Risk Reduction*, *123*, 105518. https://doi.org/10.1016/j.ijdrr.2025.105518

4. **Wang, M.**, Passalacqua, P., Cai, S., & Dawson, C. (2024). c-HAND: Near Real-Time Coastal Flood Mapping. *Frontiers in Water*, *6*, 1329109. https://doi.org/10.3389/frwa.2024.1329109

3. Shetty, N., **Wang, M.**, Elliott, R., & Culligan, P. (2022). Examining How a Smart Rainwater Harvesting System Connected to a Green Roof Can Improve Urban Stormwater Management. *Water*, *14*(14). https://doi.org/10.3390/w14142216

2. Shetty, N. H., Elliott, R. M., **Wang, M.**, Palmer, M. I., & Culligan, P. J. (2022). Comparing the Hydrological Performance of an Irrigated Native Vegetation Green Roof with a Conventional *Sedum* spp. Green Roof in New York City. *PLOS One*, *17*(4), e0266593. https://doi.org/10.1371/journal.pone.0266593

1. Shetty, N. H., Hu, R., Mailloux, B. J., Hsueh, D. Y., McGillis, W. R., **Wang, M.**, Chandran, K., & Culligan, P. J. (2019). Studying the effect of bioswales on nutrient pollution in urban combined sewer systems. *Science of The Total Environment*, *665*, 944–958. https://doi.org/10.1016/j.scitotenv.2019.02.121

## Presentations

10. **Wang, M.** (2025). Downscaling compound flood estimates for neighborhood-scale insights. *MultiSector Dynamics: Urban IFL Discussions on Emerging Approaches and Synergies*

9. **Wang, M.**, Passalacqua, P., Coon, E., Rathore, S., & Perez, G. (2024). Downscaling modeled fluvial and pluvial flood inundation to a lidar grid: A new volume conservative method. *2024 AGU Fall Meeting*, Abstract H53M–1284

8. **Wang, M.**, Passalacqua, P., & Preisser, M. (2024). A Near Real-Time Compound Flood Inundation Python Package. *2024 AGU Fall Meeting*, Abstract NH41D–2342

7. Passalacqua, P., **Wang, M.**, & Preisser, M. (2024). Acute on Chronic Stressors in Communities: When Flooding Is Not the Only Issue. *2024 AGU Fall Meeting*, Abstract NH23A–2272

6. Michalek, A., Villarini, G., Done, J., **Wang, M.**, & Passalacqua, P. (2024). Quantifying the Uncertainty of Ensemble Members and Downscaling Techniques in Flood Hazards and Their Associated Socioeconomic Impacts across the Delaware River Basin. *2024 AGU Fall Meeting*, Abstract H53M–1284

5. **Wang, M.**, Passalacqua, P., & Moftakhari, H. (2023). Quantifying Compound Flooding in Southeast Texas: A Novel Approach for Assessing Impacts on Communities and Infrastructure. *2023 AGU Fall Meeting*, Abstract NH23D–0744

4. Abdelkader, M., **Wang, M.**, Ghanghas, A., Ferreira, C., & Mandli, K. T. (2022). QuiCFIM, a Quick GIS-Based Combined Flood Inundation Mapping Framework. *2022 AGU Fall Meeting*, Abstract H45I–1481

3. Passalacqua, P., Preisser, M., **Wang, M.**, Bixler, P., Hooks, A., Hofmann, J., Haselbach, L., Moftakhari, H., Evans, H., Thies, C., & Maidment, D. (2022). Preparing for Future Floods: Leveraging Remotely Sensed Data, Modeling, and Social Science Information in a Multilayer Network Approach. *2022 AGU Fall Meeting*, Abstract H46D–01

2. **Wang, M.**, Passalacqua, P., Cai, S., & Dawson, C. (2022). c-HAND: Near Real-Time Coastal Flood Mapping. *2022 AGU Fall Meeting*, Abstract H42C–1262

1. Shetty, N. H., & **Wang, M.** (2018). Performance of a "Next Generation" Green Roof with Irrigation and Smart Detention. *2018 EWRI International Low Impact Development Conference*, Abstract 437268

## Grants & Awards

**Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI)**

- Hydroinformatics Innovation Fellowship *2024*

**The University of Texas at Austin**

- John E. Kasch Endowed Graduate Fellowship in Engineering *2020 – 2024*
- Dean's Prestigious Fellowship Supplement *2020 – 2023*

**National Science Foundation**

- Graduate Research Fellowship *2020 – 2023*

**Fulbright Program, U.S. Department of State**

- Study/Research Award *2019 – 2020*
- Critical Language Enhancement Award *2019*

**Franklin & Marshall College**

- *Magna cum laude* | Phi Beta Kappa *2016*
- G. Kenneth Kohlmaier Family Scholarship *2011 – 2014*
- C. Richard Plank Scholarship *2011 – 2014*

## Skills & Licenses

**Programming Languages**

- **Advanced:** Python, MATLAB | **Intermediate:** Unix shell, TEX, Julia | **Beginner:** Ruby, JavaScript, C

**Programming Tools**

- Unix, Git, NumPy, Matplotlib, Pandas, SciPy, scikit-learn, PyTorch, Slurm (HPC), OOP paradigm

**GIS & Engineering Tools**

- ArcGIS Pro, QGIS, GDAL, GeoPandas, Rasterio, GRASS GIS, AutoCAD, SWMM, HEC-RAS

**Natural Languages**

- **Native:** English | **Working proficiency:** Mandarin Chinese (spoken and written)

**Licenses**

- Engineer-in-Training (Pennsylvania License No. ET023499)

## Open Online Courses

**Coursera**

- Machine Learning with Python [link to credential]
- Computer Vision and Image Processing Essentials [link to credential]
- Deep Learning Essentials with Keras [link to credential]