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## CEE PhD student publishes a first-author paper in prestigious Water Resources Research

March 10, 2020 | [Civil and Environmental Engineering](#)

Zhongrun Xiang, a PhD candidate in the Department of Civil and Environmental Engineering, has published a paper in the journal *Water Resources Research*. Zhongrun is also part of two college research centers - the Iowa Flood Center and IIHR—Hydroscience & Engineering.

Zhongrun's paper is: "A rainfall-runoff model with LSTM-based sequence-to-sequence learning." The paper proposed a new artificial neural network model to predict the stream flow for the next 24 hours at high accuracy. This model can serve as a complement or substitute for physically based models, especially for underperforming watersheds and stations.

The full citation is below:

Xiang, Z., Yan, J., & Demir, I. (2020). A rainfall-runoff model with LSTM-based sequence-to-sequence learning. *Water Resources Research*, 56, e2019WR025326. <https://doi.org/10.1029/2019WR025326>



### About the Water Resources Research

*Water Resources Research* publishes original research articles and commentaries on hydrology, water resources, and the social sciences of water that provide a broad understanding of the role of water in Earth's system.

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