



PSGR  
Krishnammal College for Women



**TEMPORAL FUSION TRANSFORMER AND TRANSFER  
LEARNING FOR TIME SERIES RIVER WATER QUALITY  
PREDICTION MODEL**

Thesis submitted to  
**BHARATHIAR UNIVERSITY**



for the award of the degree of  
**DOCTOR OF PHILOSOPHY**  
in  
**COMPUTER SCIENCE**

By  
**JITHA P NAIR**

Under the guidance of  
**Dr. (Mrs.) M.S. VIJAYA M.Sc., M.Phil., Ph.D.**  
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**SEPTEMBER 2023**

## CERTIFICATE

This is to certify that the thesis entitled “**TEMPORAL FUSION TRANSFORMER AND TRANSFER LEARNING FOR TIME SERIES RIVER WATER QUALITY PREDICTION MODEL**” submitted to the Bharathiar University, in partial fulfilment of the requirements for the award of the **Degree of Doctor of Philosophy in Computer Science** is a record of original research work done by **JITHA P NAIR** during the period October 2019 to September 2023 of her study in the Department of Computer Science at PSGR Krishnammal College for Women, Coimbatore under my supervision and guidance, and the thesis has not formed the basis for the award of any Degree / Diploma / Associateship / Fellowship or other similar title to any candidate of any University.

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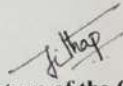
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## DECLARATION

I, JITHA P NAIR hereby declare that the thesis, entitled "TEMPORAL FUSION TRANSFORMER AND TRANSFER LEARNING FOR TIME SERIES RIVER WATER QUALITY PREDICTION MODEL" submitted to the Bharathiar University, in partial fulfilment of the requirements for the award of the Degree of Doctor of Philosophy in Computer Science, is a record of original and independent research work done by me during October 2019 to September 2023 under the supervision and guidance of **Dr. (Mrs.) M.S. VIJAYA M.Sc., M.Phil., Ph.D., Associate Professor and Head (Retd.)**, Department of Computer Science (PG) at PSGR Krishnammal College for Women, Coimbatore and it has not formed the basis for the award of any Degree / Diploma / Associateship / Fellowship or other similar title to any candidate of any University.

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## CERTIFICATE OF GENUINENESS OF RESEARCH PUBLICATION


This is to certify that the Ph.D. candidate Ms. **JITHA P NAIR** working under my supervision has published a research article titled *Temporal Fusion Transformer: A Deep Learning Approach for Modeling and Forecasting River Water Quality Index* in the standard refereed Scopus-Indexed Journal named **International Journal of Intelligent Systems and Applications in Engineering (IJISAE)** with Volume No. 11 Page Numbers 277- 293 and year of publication 2023. The contents of the publication incorporate part of the results presented in her thesis.

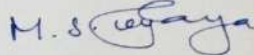
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