






# ABINAYA B

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## EDUCATION

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<b>(PhD)</b>	Climate Change and Water Resources <i>Department of Civil Engineering</i> <i>Anna University</i>	Jan 2019 – Present
<b>ME</b>	Hydrology and Water Resources Engineering <i>Centre for Water Resources (CWR)</i> <i>Anna University</i>	2014 – 2016
<b>BE</b>	Civil Engineering <i>University College of Engineering – Ariyalur Campus</i>	2009 – 2013

## RESEARCH EXPERIENCE

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➤ **Junior Research Fellow** *Aug 2016 - Nov 2017*  
*(1 year & 4 months)*

*Workplace: Centre for Climate Change and Adaptation Research, Anna University*

Project Title: **Impact of Climate Change on Pluvial and Fluvial Flooding in Selected Areas in Chennai**

Funding Agency: State Planning Commission (SPC), Govt. of Tamil Nadu.

Accomplishments:

- Rainfall-Runoff modelling for Velachery using **SWMM**
- Flood modelling for Adyar river using **HEC-RAS**
- Flood inundation mapping using **ArcGIS**

➤ **Junior Research Fellow**

*May 2018 – Sep 2021  
(3 years and 5 months)*

*Workplace: Centre for Climate Change and Disaster Management, Anna University*

**Project Title: Dynamic Downscaling to Study Climate Change Impacts on Water Resources in India**

**Funding Agency:** Ministry of Water Resources (MoWR), Govt. of India

**Accomplishments:**

- Indian River basins mapping using **ArcGIS**
- Rainfall-Runoff modelling for Indian River Basins Using **SWAT**

## **SKILLS**

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|---------------------------|------------------------------|
| ▪ Hydrological modelling  | ▪ GIS & Remote Sensing       |
| ▪ Flood modelling         | ▪ Data collection & analysis |
| ▪ Climate change analysis | ▪ Report writing             |

## **PUBLICATIONS**

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### ***Journal Publications***

- Andimuthu, Ramachandran, Palanivelu Kandasamy, B. V. Mudgal, Anushiya Jeganathan, Abinaya Balu, and Gugesesh Sankar. "**Performance of urban storm drainage network under changing climate scenarios: Flood mitigation in Indian coastal city.**" *Scientific Reports* 9, no. 1 (2019): 7783.
- Ramachandran, Andimuthu, Kandasamy Palanivelu, B. V. Mudgal, Anushiya Jeganathan, Sankar Gugesesh, Balu Abinaya, and Arunbabu Elangovan. "**Climate change impact on fluvial flooding in the Indian sub-basin: A case study on the Adyar sub-basin.**" *PLoS ONE* 14, no. 5 (2019): e0216461.

### ***Conference Paper***

- Abinaya B, Anushiya J and Palanivelu K, "**Long Term Trend Analysis in Precipitation, Temperature and Evapotranspiration in Tamil Nadu using GIS**", 4<sup>th</sup> Indian Biodiversity Congress, Pondicherry University, 10-12 March 2017, 353.

- Anushiya J, Palanivelu K, Mudgal BV, Ramachandran A, Abinaya B, Gugesesh S, **“Impacts of Climate Change on Flooding in Chennai Metropolitan Area”**- 10th International Conference on Urban Climate/14th Symposium on the Urban Environment, August 9, 2018, 9E.2.

## SOFTWARE AND TOOLS

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**Hydrology:** SWAT, SWMM, HEC-HMS, HEC-RAS, MIKE Hydro River, MIKE Flood

**GIS:** ArcGIS

**Data analysis:** R, MS Excel

## ACTIVITIES

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- Completed the course on **“RS & GIS Applications in Water Resource Management”** conducted by Indian Institute of Remote Sensing, ISRO, Govt. of India.
- Completed the **“Introductory E-Course on Climate Change”**, conducted by UNITAR.
- Attended the **“Monsoon School on Urban Floods”**, in Indian Institute of Science, Bangalore.
- Participated in National Workshop on **“Water Resources System Modelling”**, by Centre for Water Resources, Anna University.
- Participated in **“Three days Training Programme on Geo-spatial Technologies”**, in Central University of Rajasthan, Jaipur.
- Participated in the Workshop on **“High-Resolution Climate Projections and Analysis for India”**, organized by TERI, New Delhi.
- Participated in the **“Workshop on Research Methodology and Scientific Writing”** at Anna University, Chennai.
- Participated in the training programme on **“URKUND: Plagiarism Detection Service”** jointly organized by University Library & Centre for Research, Anna University, Chennai.
- Participated in the research oriented Faculty Development Training Programme under the **“UGC XII plan scheme on Groundwater Modelling”**, conducted by CWR, Department of Civil Engineering, CEG campus, Anna University, Chennai.
- Attended a Webinar on **“Climate Change Effects on Weather Patterns”**, organized by ICCR, Maharaja Sayajirao University of Baroda.
- Attended a Webinar on **“Climate Resilient Cities”**, organized by ICCR, Maharaja Sayajirao University of Baroda.

- Attended a Webinar on **“Rejuvenating Climate Actions: Think global act local”**, organized by ICCR, Maharaja Sayajirao University of Baroda.
- Participated in three days Faculty Development Programme on **“Groundwater Modelling”**, organized by Mepco Schlenk Engineering College.
- Attended the Online Faculty Development Program on **“Sustainable Water Resource Management”**, jointly organized by Department of Civil Engineering & Internal Quality Assurance Cell (IQAC).
- Actively participated in the Webinar on **“Data – Driven Optimization in Engineering”**, jointly organized by Department of Civil Engineering & Internal Quality Assurance Cell (IQAC).
- Attended the Online Faculty Development Program on **“Water Resources Engineering”**, jointly organized by Department of Civil Engineering & Internal Quality Assurance Cell (IQAC).
- Completed the Online course on **“Introduction to Tensorflow for Artificial Intelligence, Machine Learning and Deep Learning”**, offered through Coursera.
- Attended the Online Training Course on **“Understanding Sea Level: data analysis and applications”** organized by INCOIS.
- Completed the five days virtual training course on **“Water security for resilience to deal with disasters and outbreaks”**, organized by National Institute of Hydrology, Roorkee.
- Completed the two day seminar on **“Advances in Flood Modelling – Coastal & Inland Cities”**, organized by DHI.
- Participated in the one week Online FDP on **“Advances in Modelling of Hydrological Extreme events”**, organized by B.M.S. College of Engineering, Bengaluru.
- Participated in the INCCC Workshop on **“Impact of Climate Change on Water Resources at River Basin Scale”**, organized by IIT Bombay.
- Attended the third webinar of the series **“Climate Change and COVID-19 on the topic of Innovations in Climate Change Adaptation and Mitigation”**, organized by Government of Gujarat, Climate Change Department.
- Attended the fourth webinar of the series **“Climate Change and COVID-19 on the topic of Climate Change and Water Resource Management”**, organized by Government of Gujarat, Climate Change Department.
- Actively participated in webinar on **“Climate Changes – Role of Engineers”**, organized by Department of Civil Engineering and Engineering Council of India, New Delhi.
- Participated in the online 5 days Webinar on **“Geo – Environmental Engineering”**, organized by Department of Civil Engineering, Sri Ramakrishna Engineering College, Coimbatore.

- Completed the online training on **“E-course on Hydro-Meteorological and Climate Data Analysis: Basic and Advanced Techniques”**, organized by National institute of Hydrology, Roorkee.
- Participated in the online course on **“Machine learning to Deep Learning: A journey for remote sensing data classification”**, organized by Indian Institute of Remote Sensing, ISRO.
- Participated in one day online workshop titled **“SAR Application for flood hazard mapping and monitoring”**, organized by Indian Institute of Remote Sensing (IIRS), ISRO
- Successfully participated in the ‘World Water Day’ online lecture on **‘Impact of land use and land cover changes on water resources in a tropical river basin’** organized by Freie Universität Berlin Germany
- Participated in and completed online the **“Joint ICTP-IAEA Workshop on the Use of Cosmic Ray Neutron Sensor for Soil Moisture Management and Validation of Remote Sensing Soil Moisture Maps”** by ICTP, Italy
- Attended the **4<sup>th</sup> National Conferences on India Radar Meteorology (iRAD 2020)**, organized by Indian Institute of Technology, Madras and Centre for Water Resources, Anna University.
- Completed the Online Training course on **“Understanding Sea Level: Data analysis and applications”**, organized by ITCOcean, INCOIS.
- Participated in the One-Week Training on **“Impact of Climate Change on Water Resources”** organized by Central Ground Water Board, Govt. of India.
- Completed the Online Training course on **“Visualization of marine Metdata (using FERRET)”**, organized by ITCOcean, INCOIS.