

Practical assignment

The assignment for this lecture is to **Write an essay on the future trends of Big Data applications in the water sector and provide an overview of the top 3 trends of 2023.**

Big Data applications in the water sector use large and complex datasets from various sources (e.g., sensors, drones, and simulations) to improve decision-making and water management and minimize water leakage. Understanding the future trends of Big Data applications in the water sector can bring significant benefits in terms of improved water management, enhanced monitoring and prediction, increased efficiency, better decision-making, improved water quality monitoring, and optimized water resource planning.

Practical assignment

The essay must have at least 2500 words, it can be either individual or group, and the submittal deadline is 1 week.

A list of useful references that can be used for the implementation of the essay are the following:

- Top trends in Big Data for 2022 and beyond: <https://www.techtarget.com/searchdatamanagement/feature/Top-trends-in-big-data-for-2021-and-beyond>
- On Big Data, artificial intelligence, and smart cities: <https://www.sciencedirect.com/science/article/abs/pii/S0264275118315968>
- How can Big Data and machine learning benefit environment and water management: a survey of methods, applications, and future directions: <https://iopscience.iop.org/article/10.1088/1748-9326/ab1b7d>
- Popular Big Data Technologies In 2022: <https://www.jigsawacademy.com/blog/datascience/popular-big-data-technologies-in-2022/>
- Role of Big Data analytics in solving water problems: <https://medium.com/@mynab247/role-ofbig-data-analytics-in-solving-water-problems-728ccad41d78>
- Big Data in the water industry: How does it provide big value?: <https://www.crayondata.com/big-data-in-the-water-industry-how-does-it-provide-big-value/#:~:text=The%20Benefits%20That%20Big%20Data%20Can%20Offer%20the%20Water%20Industry&text=Predictive%20maintenance%20strategies%20can%20leverage,costly%20downtime%20or%20machine%20failure>
- Big Data analysis for studying water supply and sanitation coverage in cities (Russia) <https://www.revistaespacios.com/a19v40n27/a19v40n27p21.pdf>
- Harnessing the Fourth Industrial Revolution for water <https://www.weforum.org/reports/harnessing-the-fourth-industrial-revolution-for-water/>
- An overview of Big Data applications in water resources engineering: https://www.researchgate.net/publication/334710343_An_Overview_of_Big_Data_Applications_in_Water_Resources_Engineering
- Security and privacy for Big Data: <https://www.routledge.com/Trust-Security-and-Privacy-for-BigData/Alazab-Gupta/p/book/9781032047508#>