# Data Science for Sustainability

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Cover Feature:

# Five Latest MCDM Techniques to solve Decision Making Problems

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Tutorials | Project Ideas | New Techniques | Software & Apps

Add or Share Yours | Suggest a New Technique | Add Your Scholarship/Employment Opportunity

What's New:

New Tutorial Added : Analytical Network Process
New Technique Added : MEREC
New Tutorial Added : Artificial Neural Network
New Technique Added : OPA
New App Added : Energy Consumption Indicator
New App Added : Water Consumption Indicator

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# Tutorials : MCDM

- Multi Criteria Decision Making Techniques(MCDM)
  -What is MCDM?
  -Classification of MCDM
  -Working Principle
  -Weighted Sum Method
  -Weighted Product Method
  -Analytical Hierarchy Process
  -Analytical Network Process

- More Tutorials on
- Artificial Intelligence(AI)
- Optimization Technique
- Geographical Information System(GIS)

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# Tutorials :AI

- Artificial Intelligence
  -Outlier Detection
  -Auto and Cross Correlation
  -Auto and Cross Regression
  -Distribution Function
  -Artificial Neural Network
  -Performance Metrics
  -Training Algorithms

- More Tutorials on
- Multi Criteria Decision Making
- Optimization Technique
- Geographical Information System(GIS)

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# Tutorials : Optimization Techniques

- Optimization Techniques
  -Fundamentals
  -Constraints
  -Classification
  -Linear Programming
  -Dyamic Programming
  -Quadratic Optimization
  -Genetic Algorithm

- More Tutorials on
- Multi Criteria Decision Making(MCDM)
- Geographical Information System(GIS)
- Artificial Intelligence(AI)

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# Tutorials : **GIS & RS**

- Geographic Information System(GIS)
  -Terminologies
  -Digitization Process
  -GPS
  -Coordinate Systems
  -Attribute Tables
  -Geo Referencing
  -Images and Photography

- More Tutorials on
- Multi Criteria Decision Making(MCDM)
- Optimization Technique
- Artificial Intelligence(AI)



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# Project Ideas

- **Smart Harvester for Extreme Climate**
- An app which by retrieving the local weather information can predict the potential of the area for harvesting specific crops
  **Area of Application/Consumers** : Cultivators, Urban Farmers
- **Micro-Submarine for Water Quality Monitoring**
- Sub-Water Marine System For Under Water Quality Monitoring.
  **Area of Application/Consumers** : Shipping, Tourism, Hotel, Water Park Industries.
- **Flood Forecasting with BIRR and Wildfire Impacts**
- Flood Forecasting Models considering BIRR and Wildfire Impacts.
  **Area of Application/Consumers** : Energy, Insurance, Tourism Industries

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# New Techniques

- Determination of Objective Weights Using a New Method Based on the Removal Effects of Criteria (MEREC)
- Proposed by Mehdi Keshavarz-Ghorabaee et.l.(2021),
- **Main Purpose** : New method for weighing criteria,
- **Category** : MCDM
- Click here for more details.
- Ordinal Priority Approach (OPA) in Multiple Attribute Decision-Making.
- Proposed by Younes Ataei et.al.(2019).
- **Main Purpose** : Considers Group Decision Making Approach,
- **Category** : MCDM
- Click here for more details.
- IMproved Elephant Herding Optimization (IMEHO)
- Proposed by Wei Li et.al.(2020).
- Main Purpose : Considers Group Decision Making Approach,
- **Category** : Optimization Techniques.
- Click here for more details.

# Software and Apps

- Electricity Conservation Indicator
- A simple indicator to monitor your use of electricity. It measures and compare your electricity use with the help of a scale of usability. The value of the indicator inversely varies with conservation of electricity. That means more the ECI more measure is required to reduce electricity consumption.
- Click to Use
- Water Conservation Indicator
- A simple indicator to monitor your use of water. It measures and compare your water use with the help of a scale of usability. The value of the indicator inversely varies with conservation of water. That means more the WCI more measure is required to reduce water consumption.
- Click to Use
- DataYar Webapp 1
- The Data Yar Webapp will help you to post requirement of data for your projects or if a certain set of data is available with you, you can share the same through this app.
- Click to Use

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# About Us

## About Data Science in Sustainability

A Baipatra Website

- The "Data Science in Sustainability" tries to educate about different data science techniques for the optimal management of water and energy resources which will ensure sustainability.
- *We educate you such that you become innovators and make the World sustainable*.

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