



Aditya College of Engineering & Technology

Aditya Nagar, ADB Road, Surampalem - 533437

DEPARTMENT OF INFORMATION TECHNOLOGY

B. Tech 4/4, II-SEMESTER

II Semester 2021-22

FORECASTING HOURLY ELECTRICAL ENERGY OUTPUT OF POWERPLANT USING PARAMETRIC MODELS

ABSTRACT

In a Combined Cycle Power Plant, the electricity is generated by gas and steam turbines. This kind of plants generates more than 50 percent than the traditional power plant. Electricity generated by the power plant oscillates due to number of reasons including environmental conditions. Traditional mathematical models require high number of parameters to predict the actual system output. Instead of the mathematical models Machine Learning (ML) models can be used for better predictions even with few parameters. Parametric models such as Linear regression, Polynomial regression, Linear Support Vector Machine are used to model numerous systems that have number of features. The main scope of this project is to apply these models on the Combined Cycle Power Plant to predict the electrical power output. This project which explains us the behavior of the parametric models and also validates the models with 10-fold Cross Validation method. For the Linear regression model, we made the assumptions – Normality, Linearity, Homoscedasticity, Independence and Multicollinearity to validate the results of the model.

Course Outcomes (COs)

Course Outcomes

After completing this course, the student will be able to:

CO Number	CO Statement	Taxonomy
CO1	Demonstrate the technical knowledge to identify problems in the field of Information Technology and its allied areas.	Understand
CO2	Use literature to identify the objective, scope and the concept of the work.	Apply
CO3	Analyze and formulate technical projects with a comprehensive and systematic approach.	Analyse
CO4	Identify the modern tools to implement technical projects.	Evaluate
CO5	Design engineering solutions for solving complex engineering problems.	Create
CO6	Develop effective communication skills, professional behaviour and team work.	Understand

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	2	1	2					3	2	2	2	3	2	1
CO2	2	1	2	2	1				3	2	2	2	3	3	
CO3	2	3	2	2	1				3	2	2	2	2	2	
CO4	3	1	3	2	3				3	2	2	2	2	3	1
CO5	2	2	3	3	1				2	2	1	2	2	1	1
CO6	1	1	1	2	1				2	3	2	2	1	1	2
Course	2.2	1.7	2.0	2.2	1.2				2.7	2.2	1.8	2.0	2.2	2.0	0.8

PO1	Engineering Knowledge	PO7	Environment & Sustainability
PO2	Problem Analysis	PO8	Ethics
PO3	Design / Development of Solutions	PO9	Individual & Team Work
PO4	Conduct Investigations of complex problems	PO10	Communication Skills
PO5	Modern Tool usage	PO11	Project Management & Finance
PO6	Engineer & Society	PO12	Life-long Learning