

# AROOJ FATIMA

## Electrical Engineer

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📍 Paris Rose Apartments, Sector H/13, Islamabad



## PROJECTS

### Master's Thesis

#### Hierarchical Energy Management System with Local Competitive Power Market for a Smart Grid using Multi-Agent System within a Virtual Power Plant

- This project designs a Decentralized Energy Management System for a Virtual Power Plant which distributes the electricity generated from Renewable Energy Resources and optimally distributes it to Multi Level Time Varying Load using various meta heuristic and forecasting techniques. The system is efficient enough to curtail peak hour power usage and carbon emissions. Energy trading is enabled in Smart Grid using Multi Agent System to protect the privacy of the customer.

### Final Year Project

#### Train Collision Avoidance System using Neuro-Fuzzy Logic

- The model is trained using the combined techniques of Neural Networks and Fuzzy Logic to minimize the chances of accidents in Railways. The trains are provided with best particular schedules for their departure and arrival for the purpose. Intelligent System of trains were designed over Matlab Simulink.

### Semester Projects

- DC-DC Converter
- DC-AC Inverter
- Pulse Generator
- Obstacle Avoider
- Smart Parking System
- Line Following Robot
- 4-line to 16-line decoder Circuit using 7442
- Ac to High Voltage DC Using Voltage Multiplier Circuit

## ACHIEVEMENTS

### Vice Chair Person - WIE IEEE

- Hosted DICE (Distinguished Innovations, Collaboration and Entrepreneurship) as Vice Chair Person - WIE in Comsats Lahore.
- Conducted Workshop on Arduino
- Conducted Workshop on Technical Report Writing
- Conducted Workshop on PCB Designing
- Conducted Seminar on Telecommunication System in Collaboration with PTCL.
- Participated in NUST Energy Dialogue held in Collaboration with K-Electric.

## PROGRAMMING SKILLS

JAVA  
Matlab  
Verilog



## PERSONAL SKILLS

Creative Punctual Observant Hard-Working Team Leader

## EDUCATION

### Masters in Electrical Power Engineering

#### NUST, Islamabad Campus

📅 October 2021 – Present

- Thesis Phase
- CGPA: 3.2/4.00

### Bachelor of Electrical (Electronics) Engineering

#### Comsats University, Lahore Campus

📅 September 2016 – January 2021

- PEC Accredited: OBE Washington Accord
- PEC Number: Elect/96815
- CGPA: 2.58/4.00

### FSc (Pre-Engineering)

#### Punjab College, Lahore

📅 September 2014 – May 2016

- First Division, A Grade

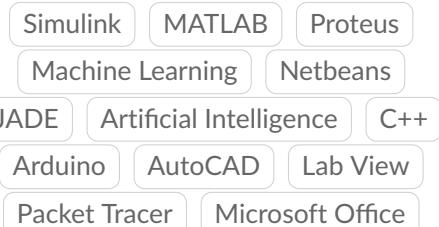
### Matriculation (Science Group)

#### connoisseur school, Sargodha

📅 September 2012 – May 2014

- First Division, A Grade

## SKILLS/ SOFTWARES



## LANGUAGES

English  
Urdu  
Punjabi



## REFERENCES

- Several available upon request