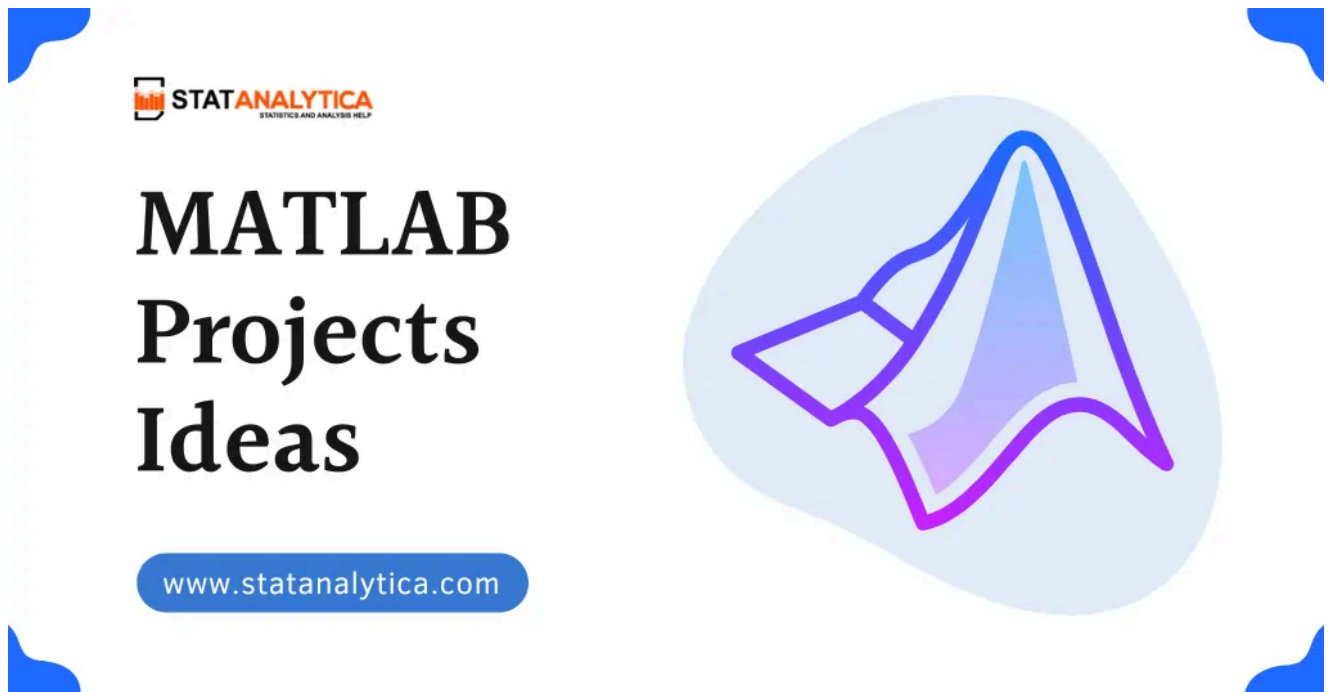# 95+ Best-Ever MATLAB Projects Ideas | Engineering Projects

General / By admin / 30th November 2021



As you know that scientists and engineers work on MATLAB to solve problems (mathematical, computational), design, and implement algorithms. Many students work on MATLAB in college or University, and all students are very excited to implement it. If you are learning MATLAB or want to test your skills, then you should implement it on MATLAB projects. So, here we provide the 95 best-Ever Matlab projects ideas.

In 2004, MATLAB had around 1 million users across industry and academia. Now, Millions of users are working on MATLAB. So, MATLAB is very important for industry or academia. Users come from engineering, economics, and science.

Sometimes you are confused about Matlab because of not implementing projects. If you want an expert in MATLAB, you should focus on projects because it helps to improve your skills.

However, if you are looking for MATLAB experts who can complete your MATLAB assignment, then don't worry. We are here to help you, our expert can provide you with the best MATLAB assignment help.

## Introduction To MATLAB

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MATLAB short form is "MATRIX LABORATORY" developed by Mathworks. MATLAB is a programming platform for engineers and scientists that allows matrix manipulation, implementation algorithms, analysis, and designing systems and products, interfacing with programs written in other languages(C, C++, Java, Fortran). It has a lot of built-in commands and functions that are used to solve a particular problem such as mathematical calculations, numerical, and others

MATLAB is used in many applications, such as control systems, communications, machine learning, image and video processing, computational finance, and computational biology. However, if you want to know the uses of Matlab, then you can check this blog out.

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In MATLAB, you can first take ideas from research, then develop enterprise applications and embedded devices. You can develop applications in Simulink and Model-based design.

## 95+ Best-Ever MATLAB Projects Ideas | Engineering Projects

Here we cover all MATLAB projects, including engineering, image processing, and others. Projects are helpful for your career because it helps in your job and skills, and you can choose Matlab projects in your final year in this article.

## Basic MATLAB Projects For Beginners

1. Automatic Vehicle Counting and Classification
2. Automate Certificate Generation
3. Log Sensor Data in MS Excel
4. Hybrid Median Filter design
5. Attendance Marking System using MATLAB
6. High-Speed Railways Automation
7. Analyze and Design an Antenna
8. Audio Compression using Wavelets
9. Color and Texture Based Image Retrieval System
10. Fake Currency Detection
11. JPEG Compressor
12. Real-Time Face Detection
13. Automatic Vehicle Counting and Classification
14. Digital FIR Filters
15. Realtime Control of a Mobile Robot
16. MATLAB-based Diameter Measurement of the Object

## Mechanical Engineering MATLAB Project Ideas

1. Strategies for Co-operated Wood Chip Fired and Municipal Waste Fired Combined Heat and Power Plants
2. Simulation of Emission-Related Faults on a Diesel Engine
3. Analysis of Compliance Maps with MATLAB Toolbox
4. Thermal Simulation of Hybrid Drive System
5. Mild Hybrid System in Combination with Waste Heat Recovery for Commercial Vehicles.
6. Robotics Projects

## Electrical Engineering MATLAB Project Ideas

1. Animations of Light through MATLAB & Arduino
2. Microwave Remote sensing of SMAP
3. Multi-Agent system design also for an interconnected power system restoration
4. Dynamic Modeling & Simulation of Electric Submersible
5. MATLAB-based Circuit Design Calculator
6. System-level power estimation using power monitors
7. Controlling Equipment using MATLAB

## MATLAB Mini Projects

1. System of Access Control.
2. A robot that fights fires.

3. The PCO meter.
4. Sprinkler system for fires.
5. TENS machine.
6. The lights are magnificent.
7. Overspeed Control System for Vehicles.
8. Highway warning light.
9. Energy consumption indicators are utilized.
10. GSM-based path-finding system.
11. Solar-powered Vapour Absorption System Design.
12. Robotic Gripping Claw with Automatic.
13. A digital-to-analog converter.
14. HAN (Human Area Networking).
15. CCU Simulator.

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**See also**  **Is Getting a Computer Science Degree Worth It? A Detailed Exploration**

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## Civil Engineering MATLAB Projects Ideas

1. Analogy Between Equilibrium of Structures and Compatibility of Mechanisms
2. System Identification of Vehicle Dynamics and Road Conditions Using Wireless Sensors
3. Train-Bridge Interaction on Freight Railway Lines

## Electronics Engineering MATLAB Projects Ideas

1. Design of FIR FILTER using a symmetric structure
2. Detection of Smart Alcohol System Intended for CAR
3. Validation of Microsoft Kinect for Use in Detecting Balance Impairment in ACL-Repaired Patients
4. Breast Cancer Detection
5. Barcode Decoder using Microcontroller
6. Economic and Emission dispatch using algorithms.
7. Remote Operated Vehicle with Infinite Range
8. Hydropower Plant Models
9. IR Remote Control for Multi-Channel
10. Single-phase SPWM (Unipolar) inverter
11. Incorporated Circuit Tester
12. Cellular Voting Machine using a Microcontroller
13. Anti-Theft Alarm system for Vehicles

## MATLAB Projects for ECE in 2023

1. Image Compression using Discrete Wavelet Transform
2. Speech Recognition System using Hidden Markov Models
3. EEG Signal Processing for Epilepsy Detection
4. ECG Signal Classification Using Machine Learning Algorithms
5. Image Processing-Based Smart Traffic Light Control System
6. Wireless Sensor Network Simulation using MATLAB
7. Design of Low-Pass Filters using FIR and IIR techniques
8. Digital Audio Equaliser Design using MATLAB
9. Face Detection and Recognition Using the Haar Cascade Classifier
10. PID Controller Control of a DC Motor
11. Artificial Neural Network Implementation for Pattern Recognition
12. Image Segmentation using Fuzzy C-Means Clustering
13. Spectrum Analysis of Audio Signals using FFT
14. Design of an Energy Management System for Smart Homes
15. Signal Reconstruction using Compressive Sensing
16. Object Tracking using Kalman Filter
17. Implementation of a Wireless Power Transfer System
18. Design of a Fire Detection and Alarm System using Sensors
19. Robotic Arm Control using MATLAB and Simulink
20. Solar Power Prediction using Machine Learning Techniques.

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## Computer Science MATLAB Projects Ideas

1. Optical Character Recognition
2. Video Surveillance System
3. Performance and Robustness Analysis of Co-Prime and Nested Sampling
4. Computer Vision and Image Processing Techniques for Mobile Applications
5. Digital Imaging
6. IoT Analytics System Development
7. Data Analyzation & Visualization
8. Bug Tracking System
9. Low-Cost Wireless Internet
10. Software Architecture for Controlling Multi-Bot

## MATLAB Image Processing Projects

1. Face recognition
2. Image Compression
3. Pedestrian detection
4. Pedestrian detection
5. Image Fusion using Curvelet & Wavelet
6. Gesture recognition
7. Segmentation of IRIS
8. License plate recognition
9. Image Filtering based on Linear & Morphological
10. Extraction of Brain Tumor using MRI Images

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**See also**  **100+ Space Research Topics [Updated]**

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## Conclusion

This is the end of this post which is about MATLAB projects ideas. On the other hand, we mentioned more than 95 MATLAB projects ideas. These projects cover various fields, including Mechanical Engineering, Electrical Engineering, Civil Engineering, Electronics Engineering, and Computer Science. However, MATLAB is a powerful tool that can be used to solve complex mathematical problems, and these projects are an excellent way to explore the software's capabilities.

Moreover, these MATLAB projects offer a valuable learning experience, as they provide an opportunity to apply theoretical concepts to practical problems. Overall, the 95+ Best-Ever MATLAB Projects Ideas are a valuable resource for anyone looking to enhance their MATLAB skills and expand their knowledge in various fields.

## FAQs

**Q1. What is the application of MATLAB?**

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MATLAB is a programming language created by Mathworks. The language has been applied use in engineering, science, and data analysis. It is most commonly used in the fields of signal processing, communications systems, control systems, digital image processing, circuit design, and testing. Matlab can be applied to many different types of problems with its wide-ranging capabilities. It can solve problems that are impossible to solve using simpler languages like C++ or Java.
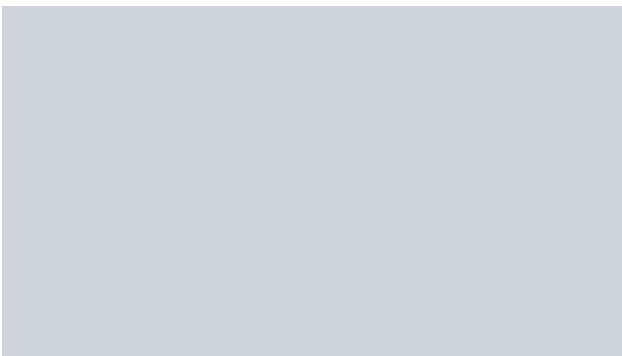
**Q2. Who invented MATLAB?**

MATLAB stands for "matrix laboratory." The software was developed in 1979 by Cleve Moler and then worked at the National Bureau of Standards. At the time, Moler was working on linear algebra problems for engineers, and a way to simplify complex calculations. Moler developed MATLAB using Fortran to make it easier to do linear algebra computations with matrices, large numbers, and complex numbers.
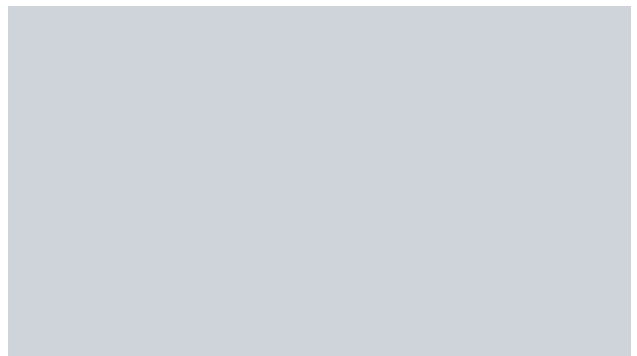
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