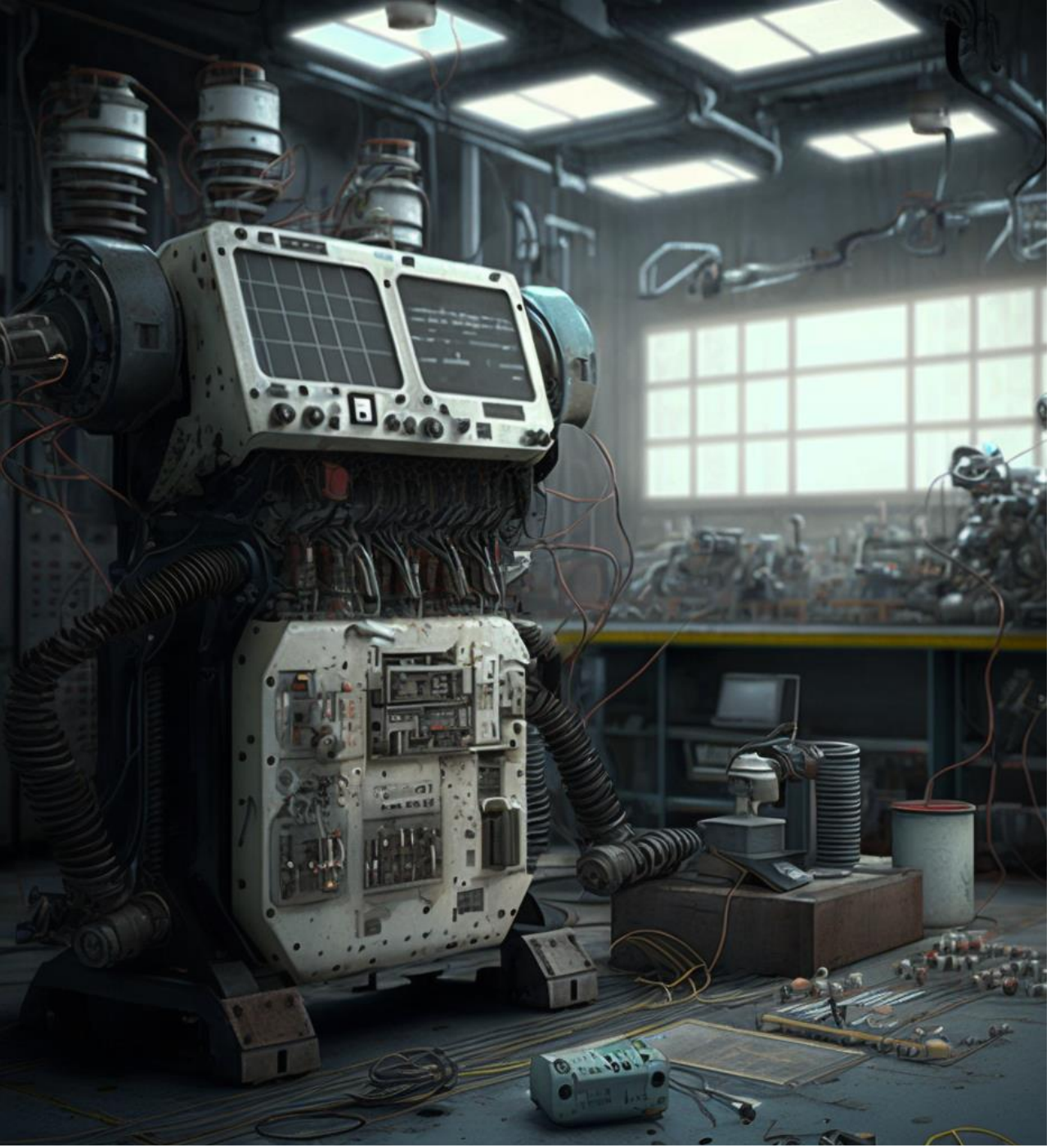
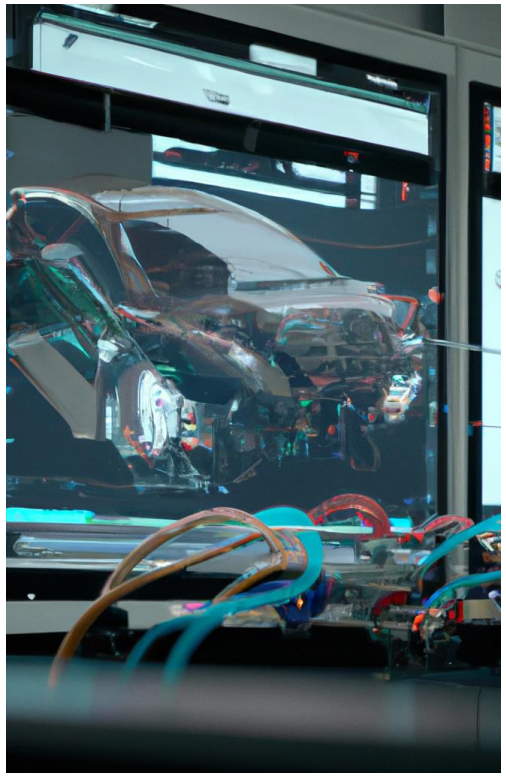


Revolutionizing Motors, In-Wheel Vehicles, and Robotics Controls

A Tour of Our New Mechatronics LAB

Our new mechatronics lab

Is an exciting addition to our institution, providing students with a unique opportunity to practice about mechanical system and electrical motors control, in addition to the control and simulation of Electrical Vehicle (EV) with different In-Wheels motor configuration.



The students will have the chance to explore the use of hardware In The Loop “OPAL HIL”, as well as learn about CarSim, MATLAB, Simulink and LabVIEW.

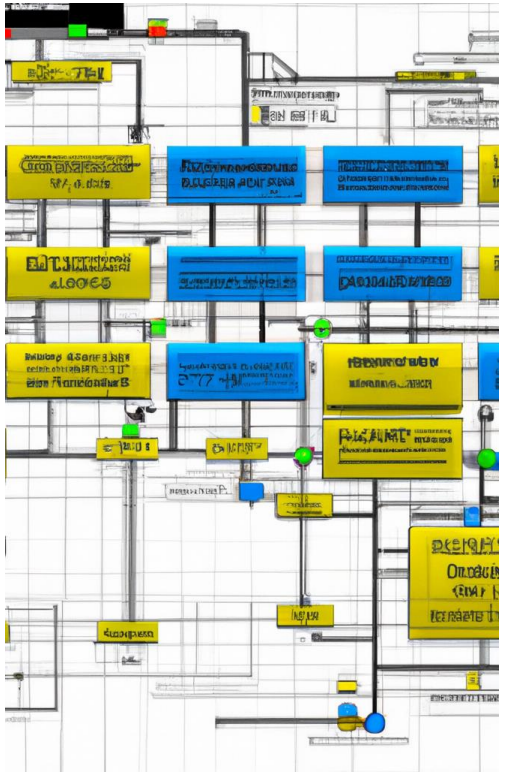
With this state-of-the-art facility, we are committed to providing our students with the best possible learning experience, preparing them for the challenges and opportunities that lie ahead.

Mastering Control Applications with MathWorks and National Instruments

MATLAB, Simulink, and LabView are widely used in a variety of industries and research areas. Some common applications include robotics, aerospace, automotive, industrial automation, and biomedical engineering. These tools provide a powerful platform for developing and deploying control systems for complex applications and are essential for engineers and researchers working in these fields.

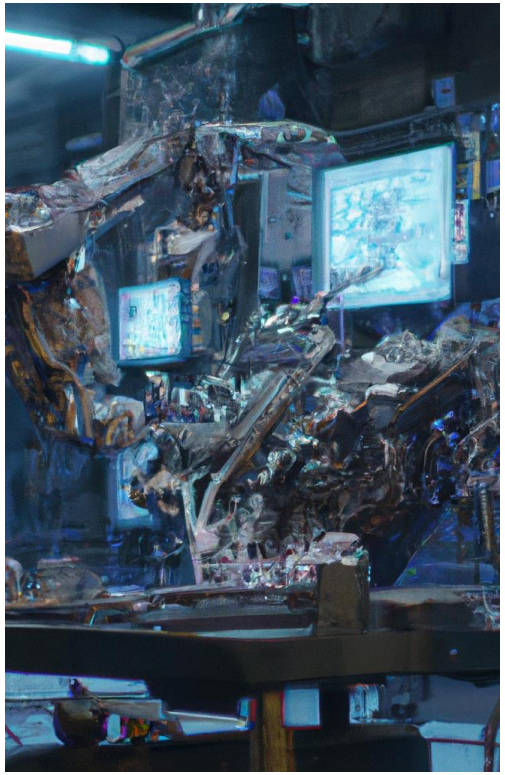
- With MATLAB, you can develop algorithms, create models, and simulate systems. It also supports the development of graphical user interfaces (GUIs) and the integration of code written in other languages.

- With LabView, you can acquire data from sensors, analyze and visualize the data, and control external devices such as motors and actuators.

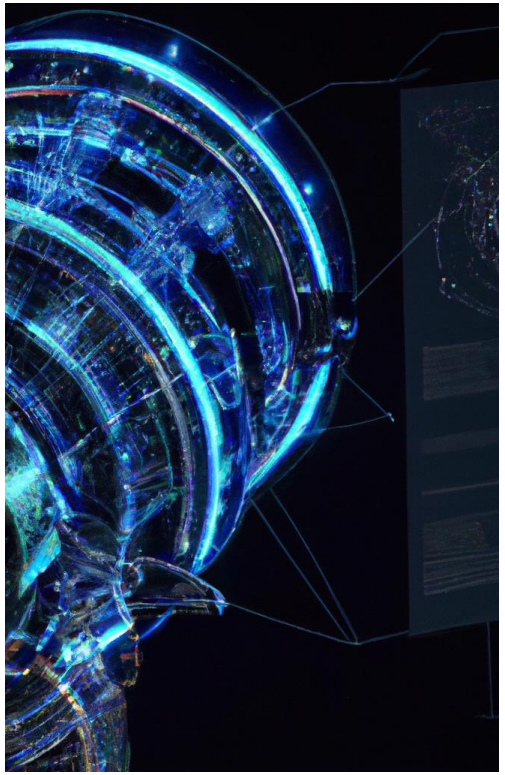


Control of Mechanical Systems through Electrical DC and AC Motors

The mechatronics lab provides students with a comprehensive understanding of the control of electrical DC and AC motors, including the principles of motor operation and the ways in which they can be controlled to achieve specific outcomes.



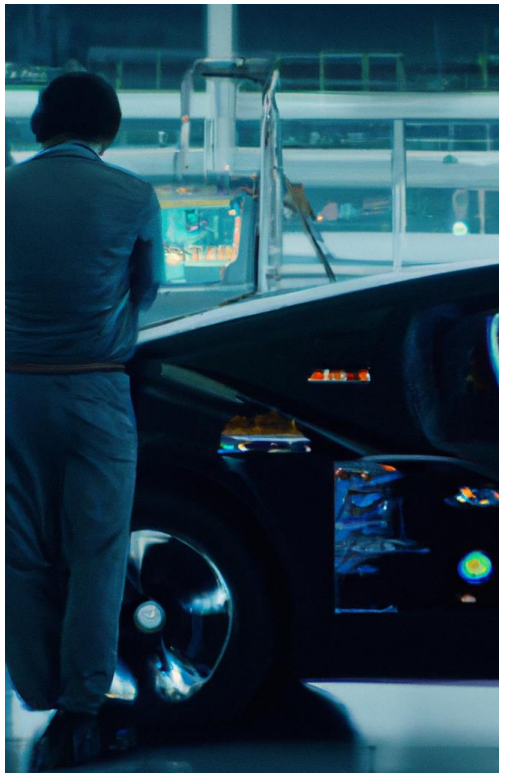
- Students will work with different mechanical systems and a range of motors, from small DC motors to larger AC motors, gaining hands-on experience with control systems and feedback mechanisms.
- Through this practical learning experience, students will develop a deep understanding of the complex interactions between motors, controllers, and Mechanical systems, preparing them for careers in fields such as robotics, automation, and industrial control.



Control of Electric Vehicles with In-Wheel Motors

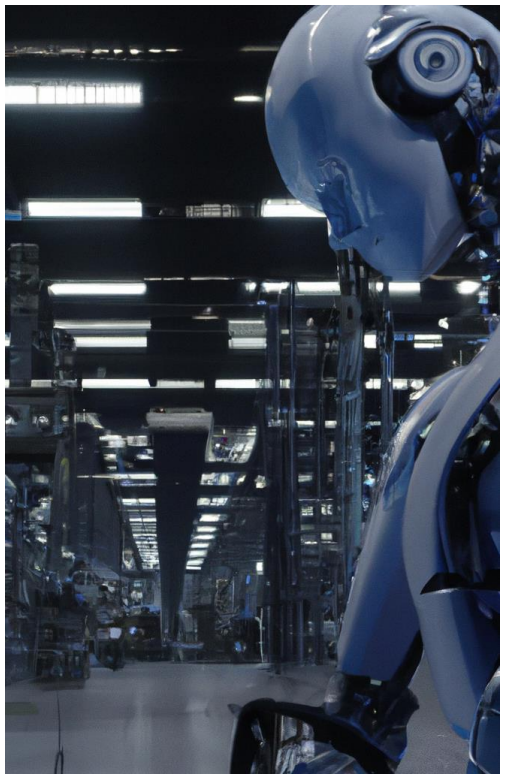
The mechatronics lab is equipped with cutting-edge technology for the study of electric vehicles with in-wheel motors. Using OPAL HIL (Hardware-in-the-Loop) and simulation software's, students can design and test their own control systems for electric vehicles, exploring the complex interactions between motor control, battery management, and vehicle dynamics.

- Through this practical learning experience, students will develop a deep understanding of the complex interactions between motors, controllers, and Mechanical systems, preparing them for careers in fields such as robotics, automation, and industrial control.



Robotics Control

The main learning objectives of this activity are to help students develop problem-solving skills, critical thinking, and creativity. By working with robotics, students will learn how to identify problems, design solutions, and test their ideas. They will also learn how to work collaboratively as a team, communicate effectively, and present their work to others.



- In addition, this activity will help students understand the practical applications of robotics in various fields, such as manufacturing, healthcare, and space exploration. They will also gain knowledge about the ethical and social implications of robotics and automation.