

From Classroom to Industry:

MATLAB's Journey in Fostering Technological Innovation



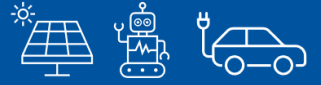
*Mounzer Saleh
Sales Account Manager
MathWorks*

Lightyear One

World's First Solar-Powered Car
450 Miles on a Single Charge.

From Student Competition to Startup.

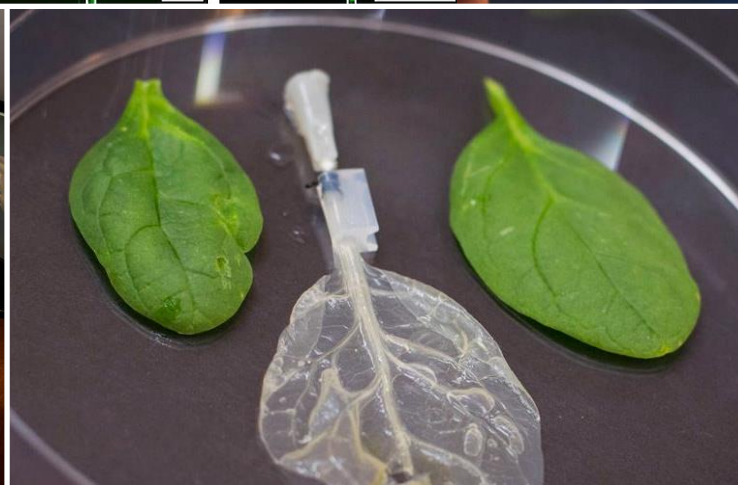
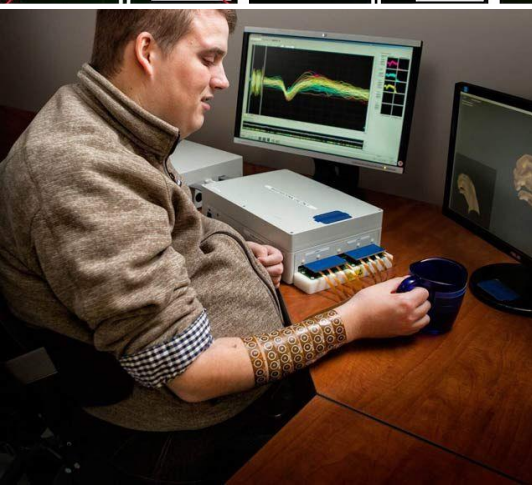
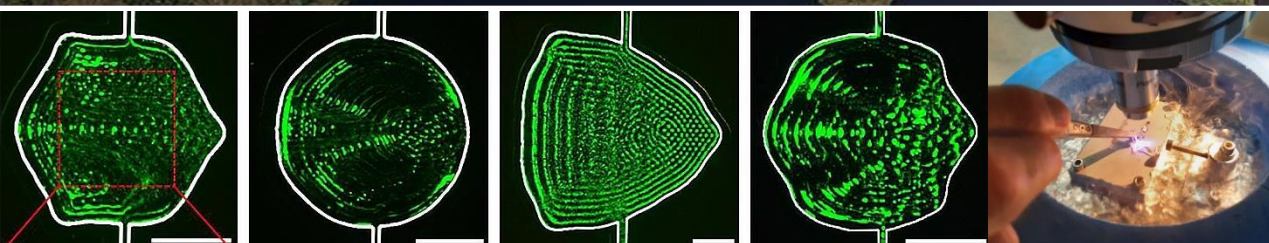
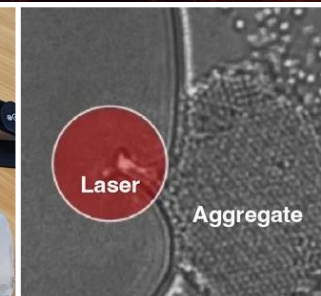
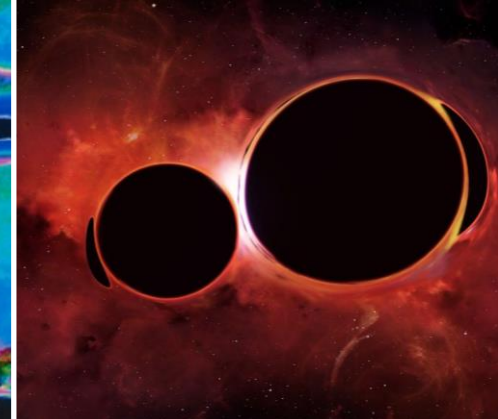
Industry



It All started from a student competition..



The company intends to start delivering the car, which it describes as “the world’s first production-ready vehicle”, in November at a cost of €250,000 (£215,000).





90,000+ business, government, and university sites



The top 10 auto manufacturers¹

¹OICA: 2016 World Motor Vehicle Production



All of the top 10 aerospace companies²

²PwC: Aerospace and Defense 2017 Year in Review

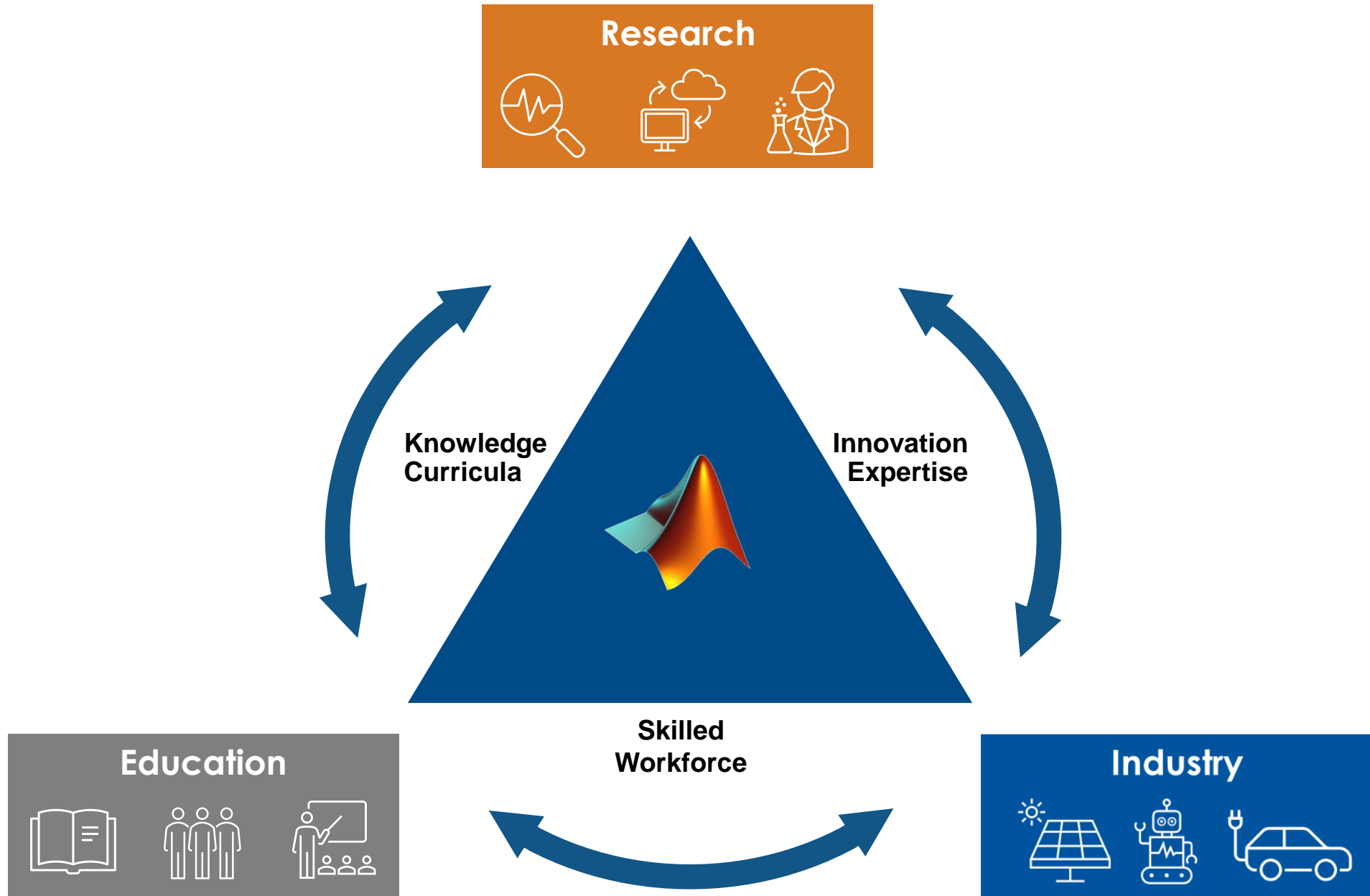


Three of the top five internet companies

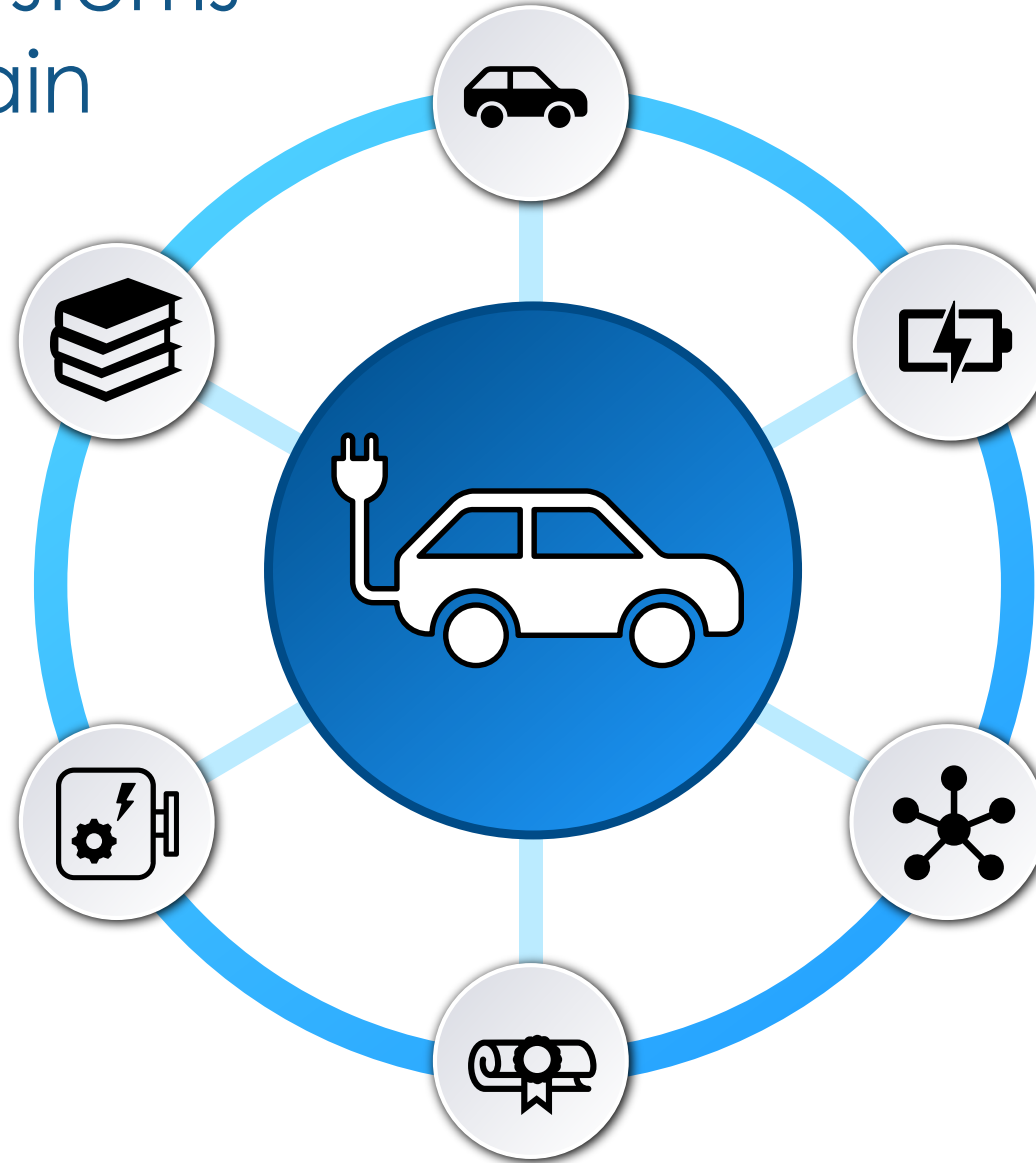
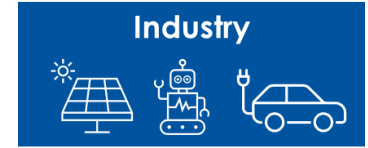
“Having campus-wide access to industry-standard software tools is great for students, particularly ones coming from an otherwise disadvantaged background or a background without a mentor.”

– Jonathan Sprinkle, Ph.D., University of Arizona

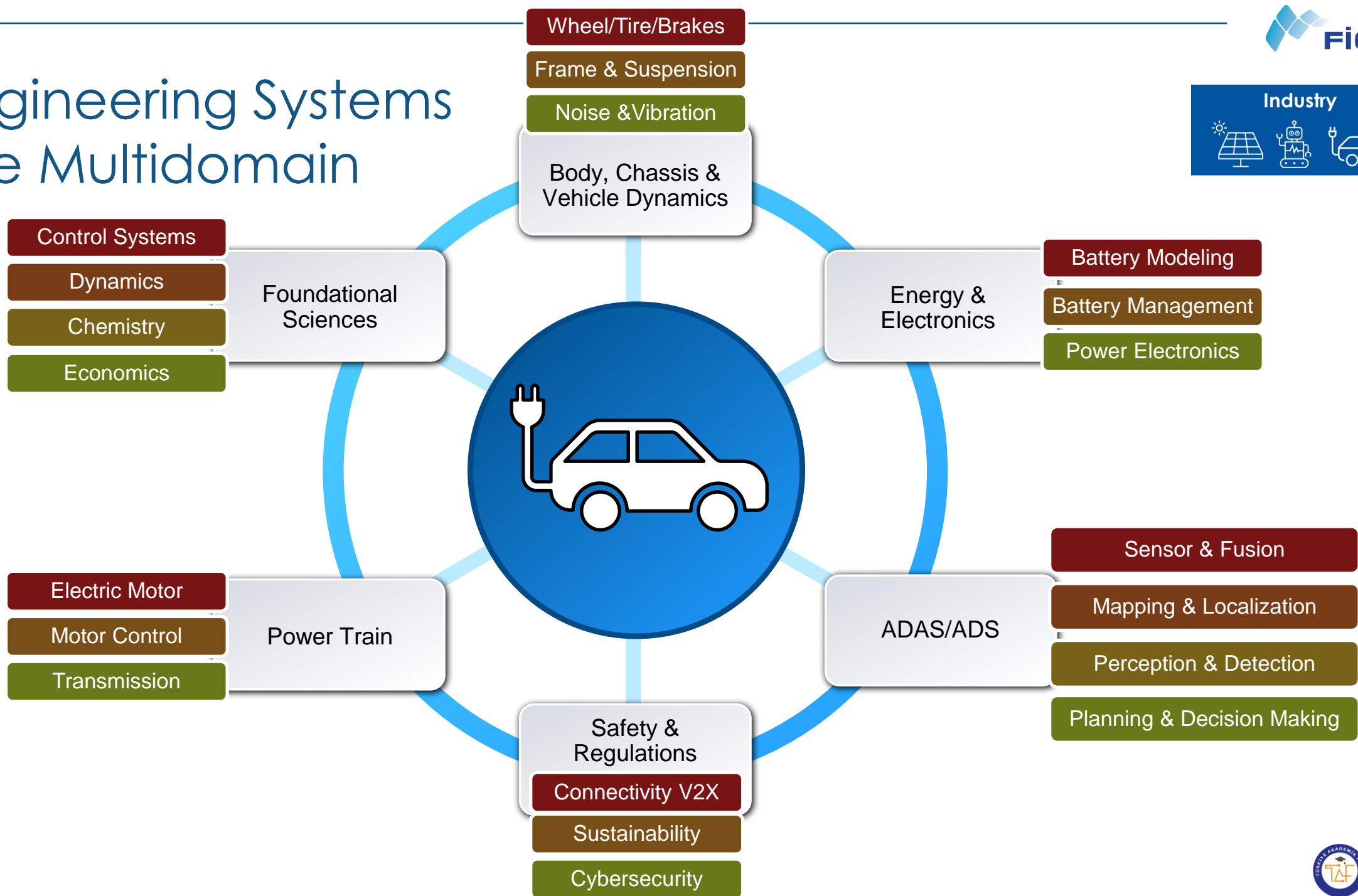
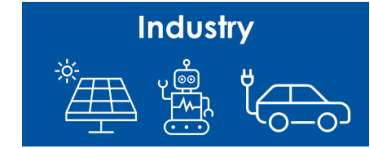




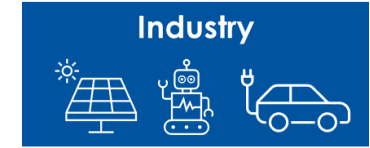
Engineering Systems Are Multidomain



Engineering Systems Are Multidomain



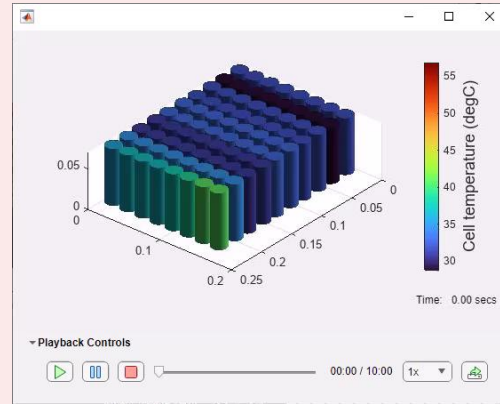
Engineering Systems Are Multidomain



Energy & Electronics

TOOLBOXES

- Simscape Battery
- Simscape Electrical
- Simulink



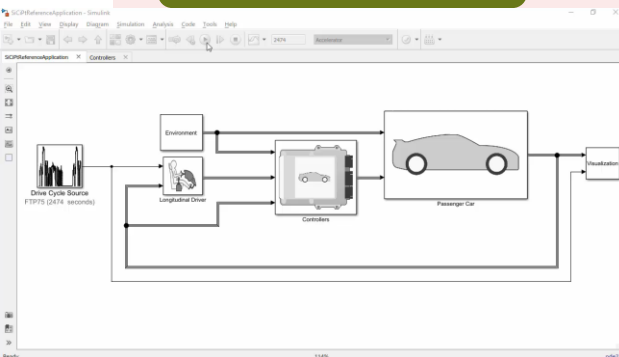
ADAS/ADS

TOOLBOXES

- Deep Learning
- Machine Learning
- Computer Vision
- Automated Driving
- Roadrunner



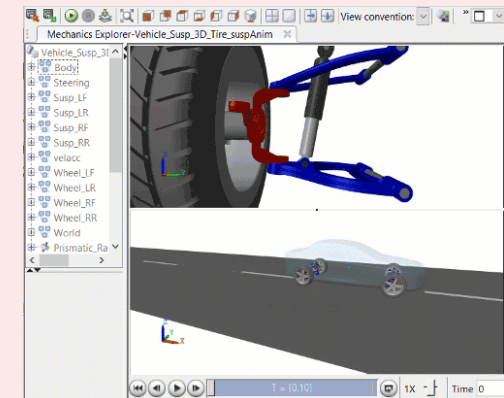
Power Train



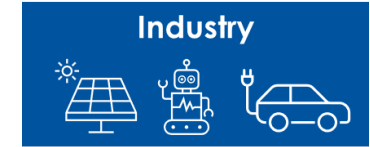
Body, Chassis & Vehicle Dynamics

TOOLBOXES

- Vehicle Dynamics Blockset
- Simscape Multibody
- Simulink 3D Animation
- Symbolic Math



Engineering Systems Are Multidomain... Curricula should be as well



Recorded Video

Birds-Eye Plot

- vision detection
- radar detection
- tracked object
- (history)
- most important object
- lane boundaries

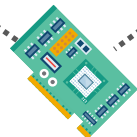
Aerospace



Mechanical



Electrical



Computer



Chemical



Civil

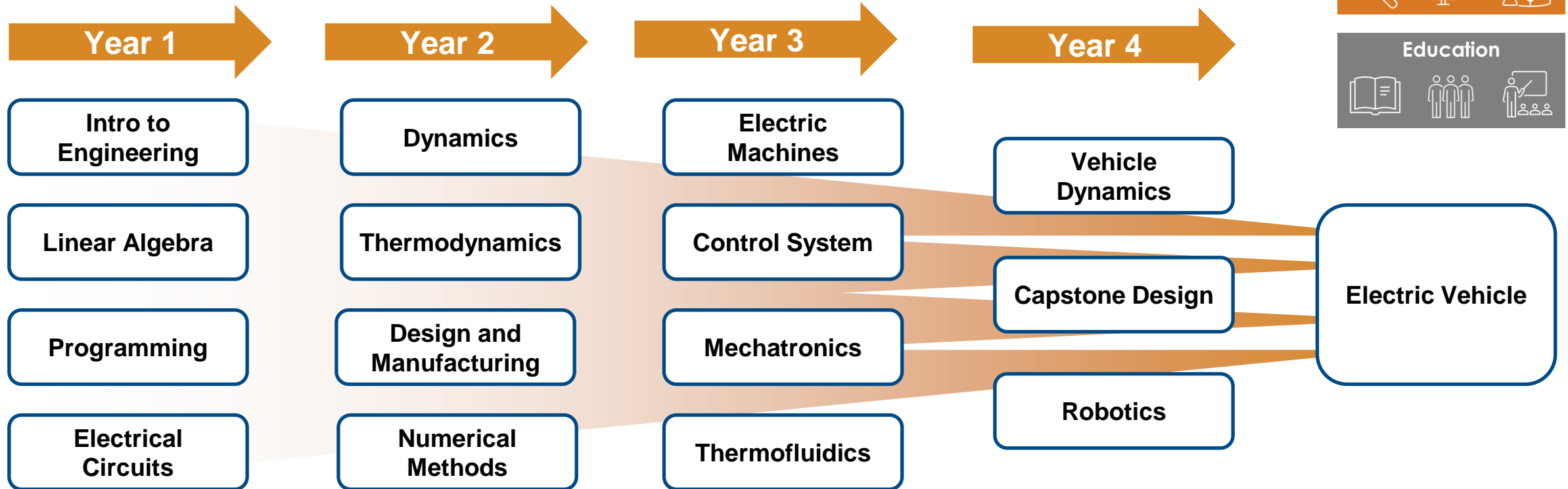


Environmental



Curriculum Design and Integration

80+ MATLAB Engineers exclusively supporting academia



Fundamental Understandings & Skills

Core Engineering Topics & Subsystem Design

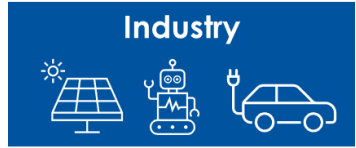
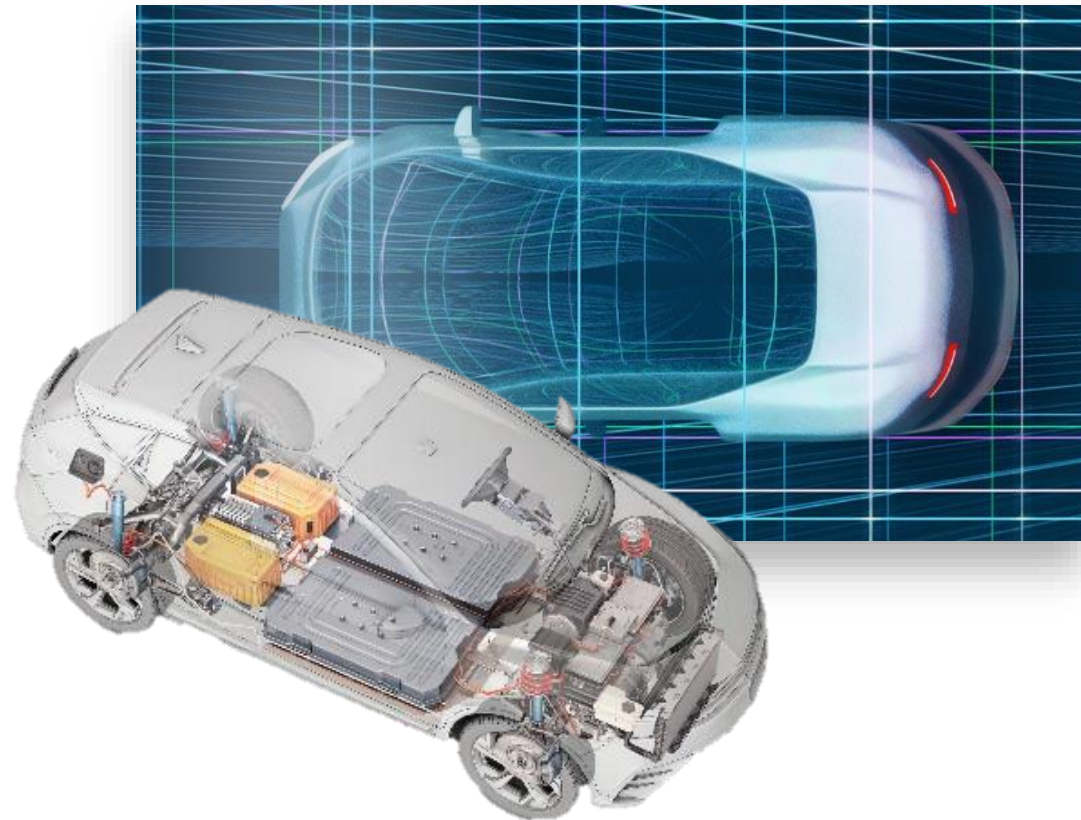
System Design & Implementation



Bosch and NIT Calicut jointly develop an EV Course to Prepare Students for Industry

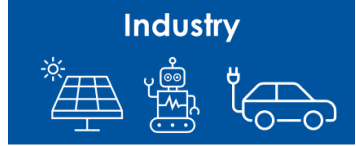
“The collaboration between NIT Calicut, MathWorks, and Bosch narrowed the gap between academia and industry, producing an electric vehicle system engineering course that has been both well received by our students and highly useful for them as well.”

– Dr. Kumaravel Sundaramoorthy, NIT Calicut



Student Competitions

70+ competition sponsored only in 2024



Accelerator and Startup Program

5000+ accelerators, incubators and startups worldwide

Industry

Research

Education

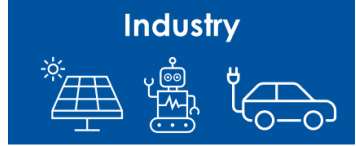


MathWorks Challenge Projects

430+ sign-up for capstone projects only in 2024



MATHWORKS CHALLENGE PROJECTS



Projects by technology trends

- [Artificial Intelligence](#)
- [Autonomous Vehicles](#)
- [Big Data](#)
- [Computer Vision](#)
- [Computational Finance](#)
- [Drones](#)
- [Industry 4.0](#)
- [Robotics](#)
- [Sustainability and Renewable Energy](#)
- [Wireless Communication](#)



Let's work together

... to equip students with required skills for industry

Ford Otosan



Vehicle Electronic Module D&R Team Member

Istanbul, Türkiye · 3 weeks ago · Over 100 applicants

On-site · Full-time · Associate

1 company alum works here

Skills: Power Electronics, Simulink, +8 more

See how you compare to over 100 other applicants. [Retry Premium for €0](#)

Easy Apply

Save

"• BSc/MSc in electrical, electronics, electrical & electronics, control automation, mechatronics engineering.

- Proven analytical skills and experience making decisions and algorithmic thinking capability.
- Basic knowledge for power electronics and electronic components and circuit analysis.
- Basic knowledge for LIN, CAN, Automotive Ethernet communication.
- An Automotive Engineering background with electronics engineering knowledge is a plus.
- Basic knowledge on OTA/FOTA
- Basic knowledge on MATLAB/Simulink
- Experience on microcontroller architectures and electronic components
- Having automotive experience or interest in automotive is an advantage. Preferably, 2+ years of experience in automotive industry.
- Basic Knowledge in CAN/LIN communication, J1939, ISO 26262 standards, ASIL A-D is a plus

Aselsan



FPGA Tasarım Mühendisi

Ankara, Türkiye · 3 weeks ago · Over 100 applicants

On-site · Full-time · Associate

Skills: Field-Programmable Gate Arrays (FPGA), Software Development, +8 more

See how you compare to over 100 other applicants. [Retry Premium for €0](#)

Apply

Save

sahibi,

- HDL simülasyon yazılım araçlarını (Modelsim/Quarta, XSim vb.) kullanmakta ve FPGA donanım arayüzleri (SPI, I2C, DDR, UART, GPIO, Serial Transceiver vb.) hakkında bilgili ve deneyimli,
- Logic Analizör, Spektrum Analizör, Osiloskop, Sinyal Üreteçleri gibi laboratuvar araçlarının kullanımı konusunda tecrübeli,
- Tercihen Sinyal işleme ve kablolu/kablosuz haberleşme alanlarında bilgili,
- En az 3 yıl FPGA içeren ürünlerde geliştirme alanında deneyimli,
- Matlab/Simulink üzerinde programlama, betik yazma ve analiz tecrübesine sahip,
- TCL ve Python gibi betik dillerini kullanmakta deneyim sahibi,
- Yüksek hızlı haberleşme arayüzleri ve protokolleri hakkında bilgi sahibi,
- DO-254 standartlarına uygun yazılım geliştirme alanında deneyimli,

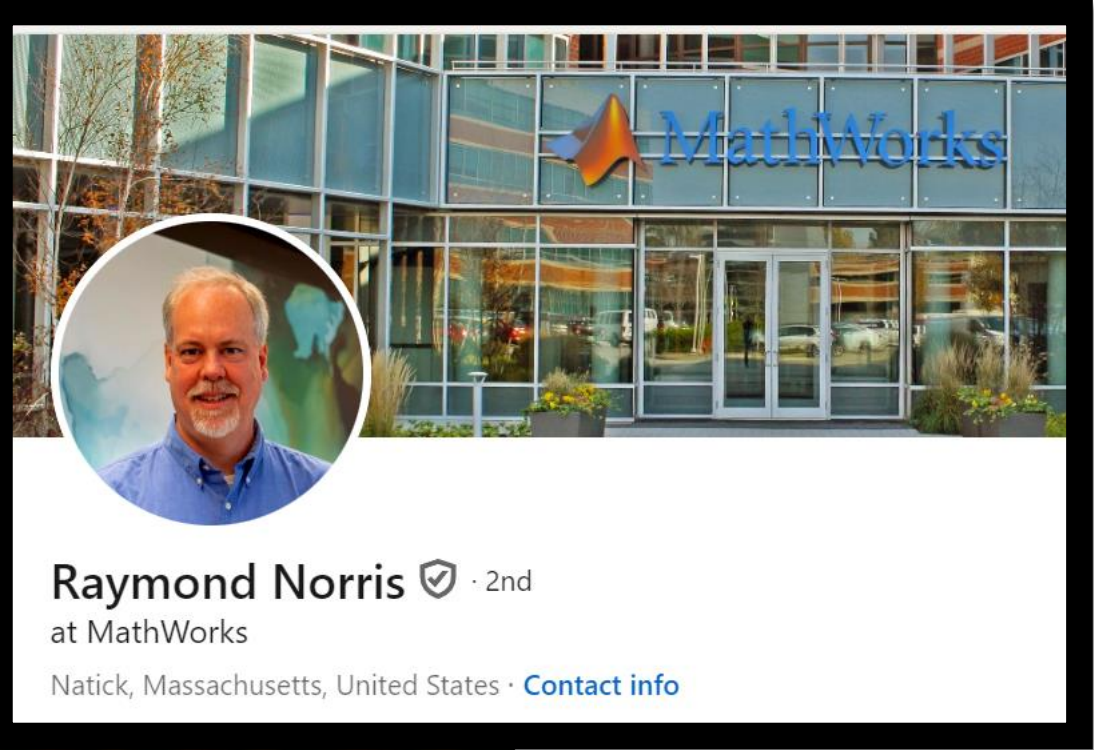
neyimi ve

neyim

Don't miss This Event !



KAYNAK BAŞVURU

Raymond Norris · 2nd
at MathWorks
Natick, Massachusetts, United States · [Contact info](#)

"Introduction to MATLAB on HPC systems at UHeM" Training

UHeM, in association with MathWorks, is pleased to announce the "Introduction to MATLAB on HPC Systems at UHeM" training on November 5, 2024. Details are as follows:

When: Tuesday, 5th November 2024 10:00 - 13:00

Where: Ulusal Yüksek Başarımlı Hesaplama Merkezi (UHeM) - IN PERSON!

[Register Here](#)

Thank you for listening!

