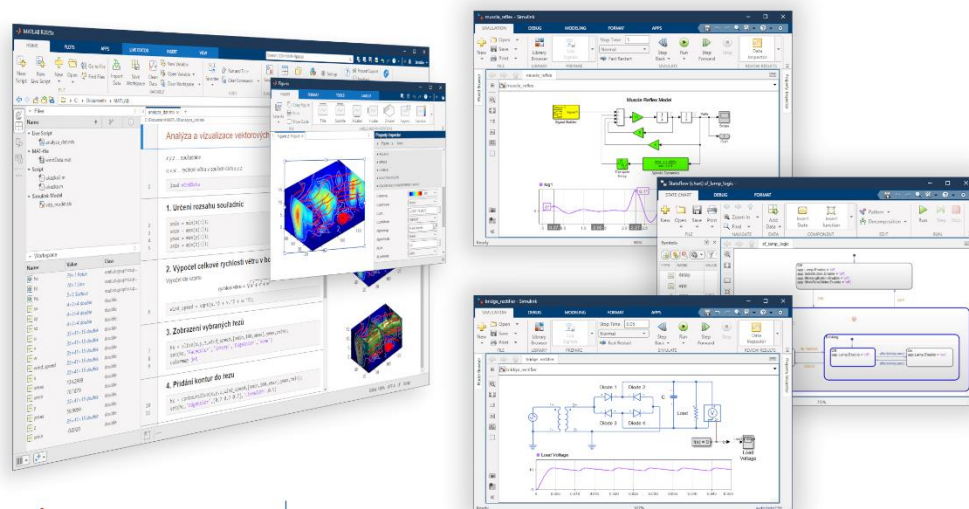


September 2025 – FEI STU

<http://matlab.sk/>

Predstavenie licencie Campus-Wide License



Martin Foltin
foltin@humusoft.sk

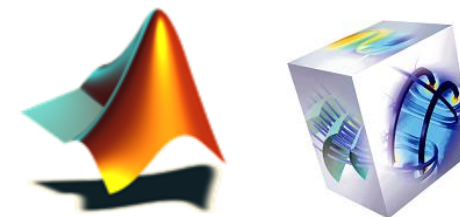
Michal Blaho
blaho@humusoft.sk

www.humusoft.cz
info@humusoft.cz

www.mathworks.com

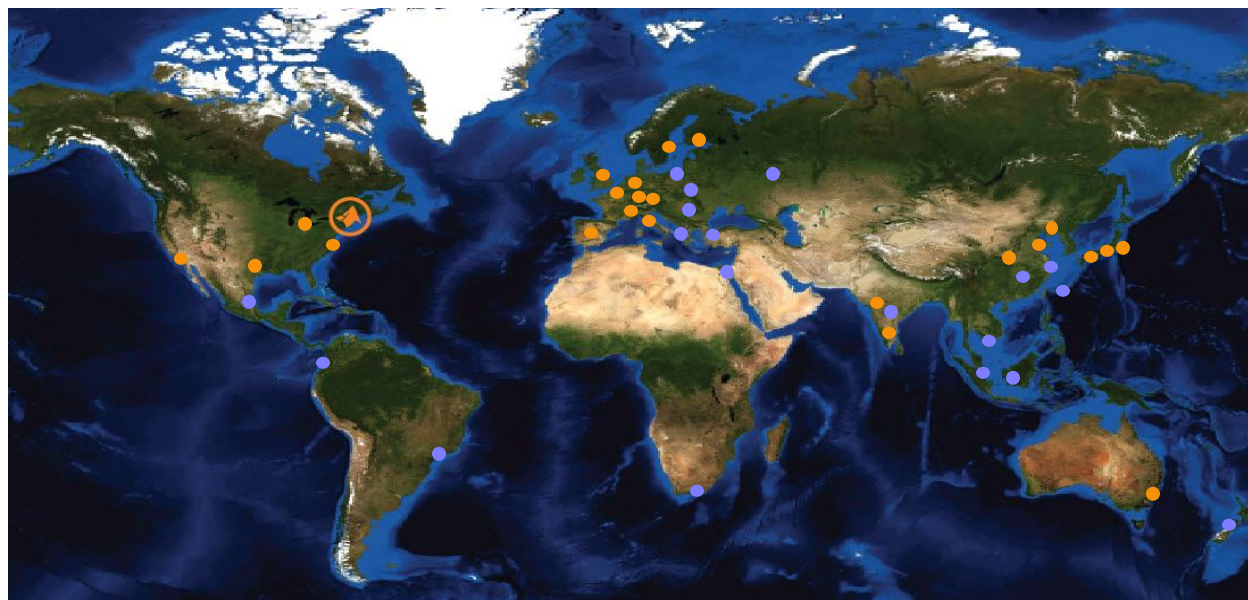
HUMUSOFT s.r.o.

- Založené v roku 1990, sídlo v Prahe, pobočka v Bratislave
- MATLAB, Simulink, Stateflow
 - Inžinierske výpočty, simulácia dynamických systémov
 - The MathWorks, Inc.
- dSPACE - vývojové systémy
 - dSPACE GmbH.
- COMSOL Multiphysics
 - Multifyzikálna analýza (metóda FEM)
 - Comsol AB
- Vývoj vlastného softvéru a hardvéru
 - Simulink 3D Animation, Simulink Desktop Real Time
 - Meracie karty, modely pre výučbu
- Výkonné pracovné stanice HeavyHorse



dSPACE

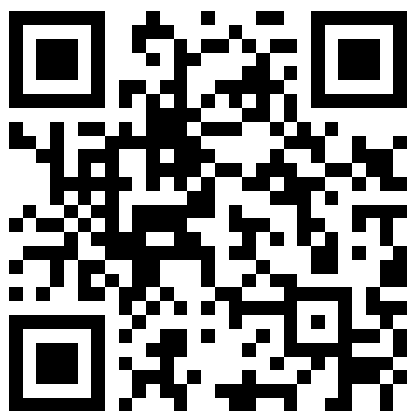




*Topografie Země v
cylindrické projekci,
vytvořeno s použitím
programu MATLAB a
Mapping Toolboxu.*

- **Sídlo:**
Natick, Massachusetts U.S.
- **Kancelárie v USA:**
California; Michigan;
Texas; Washington, D.C.
- **Európa:**
Francúzsko, Nemecko, Taliansko,
Holandsko, Španielsko, Švédsko,
Švajčiarsko, Veľká Británia
- **Ázia / Pacifik:**
Austrália, Čína, India, Japonsko, Kórea
- Distribútori v 20 krajinách

Interakcia Instagram & Discord & LinkedIn



Čo je MATLAB a Simulink

- MATLAB
 - Inžiniersky nástroj a interaktívne prostredie pre vedecké a technické výpočty
 - Grafické a výpočtové nástroje
 - Grafické aplikácie (GUI, APPS)
 - Otvorený systém
- Simulink
 - Nadstavba MATLABu
 - Modelovanie, simulácia a analýza dynamických systémov
 - Prostredie blokových schém
 - Platforma pre Model Based Design
- Aplikčné knižnice



MATLAB v priemysle



Letecký



Automobilový



Biotech



Farmaceutický



Telekomunikácie



Oceány a zem



Elektronika



Energetika



Automatizácia



Medicína



Ťažobný



Neurológia



Aplikovaná fyzika



Železnice



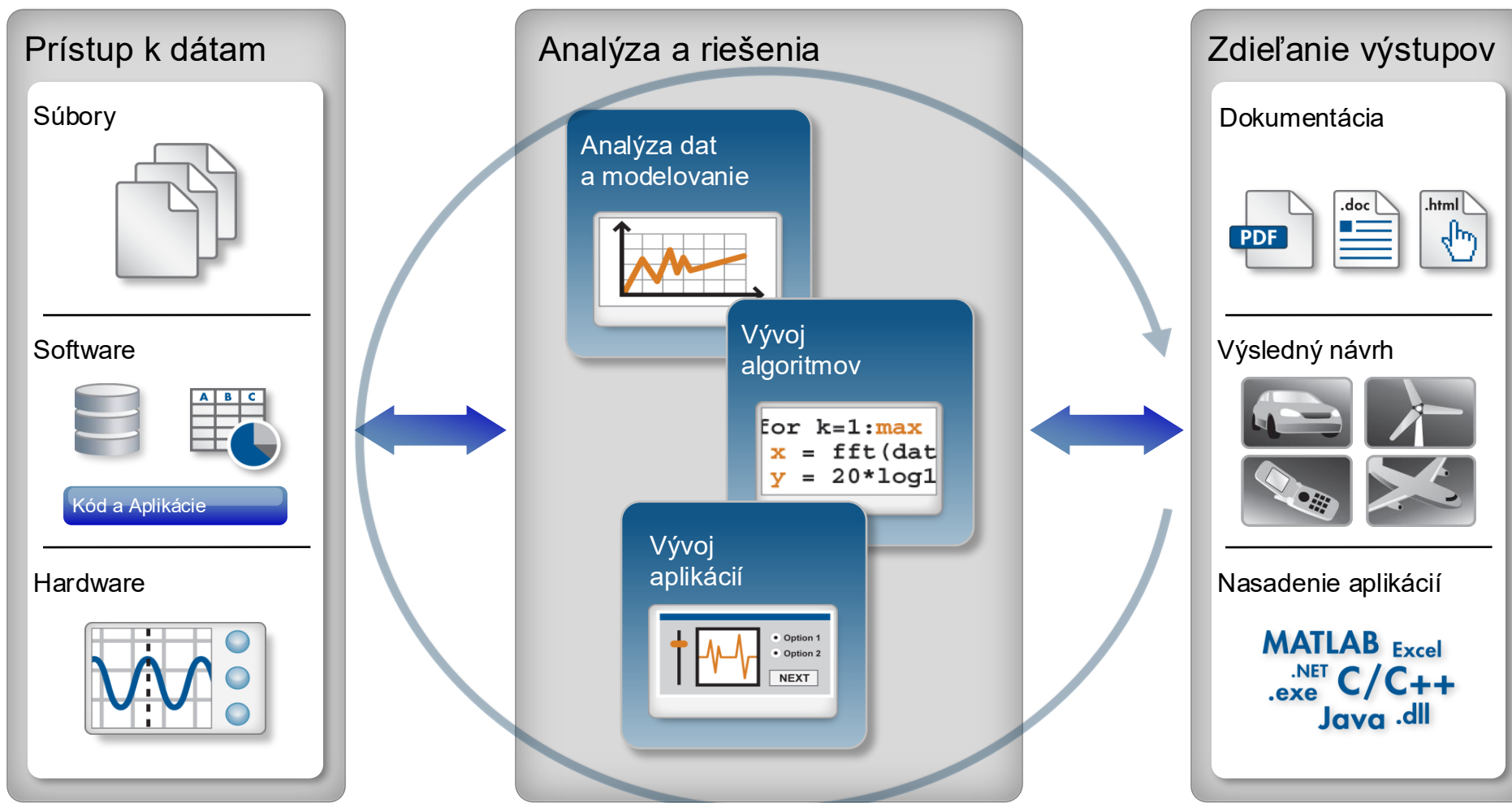
Finančný



Informatika

<https://www.mathworks.com/solutions.html#industries>

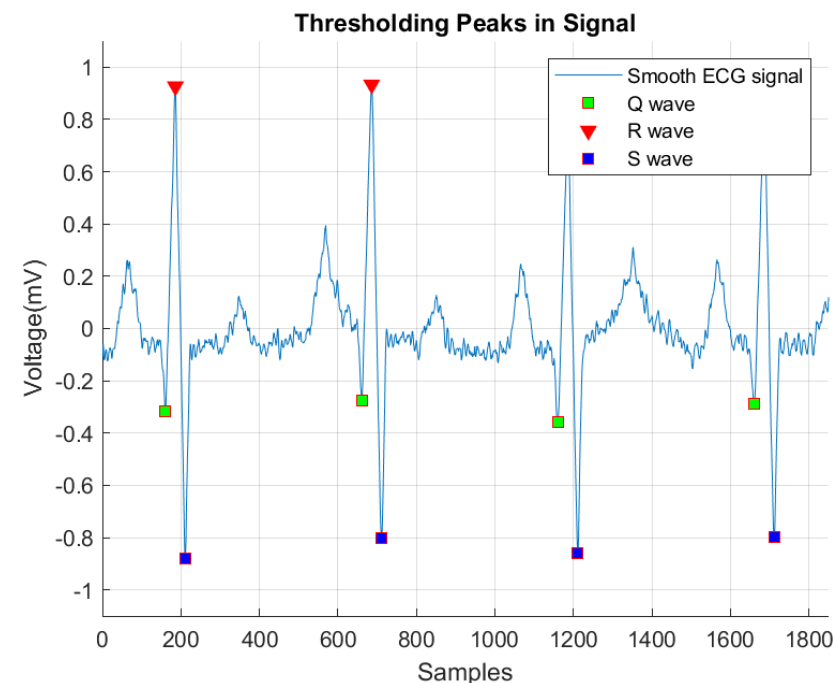
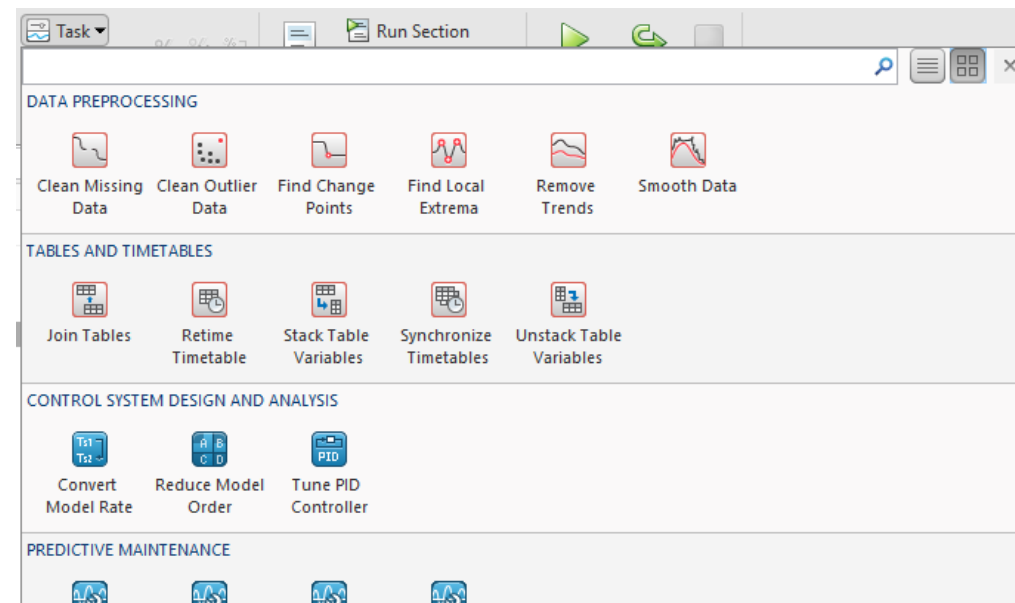
Technické výpočty v MATLABe



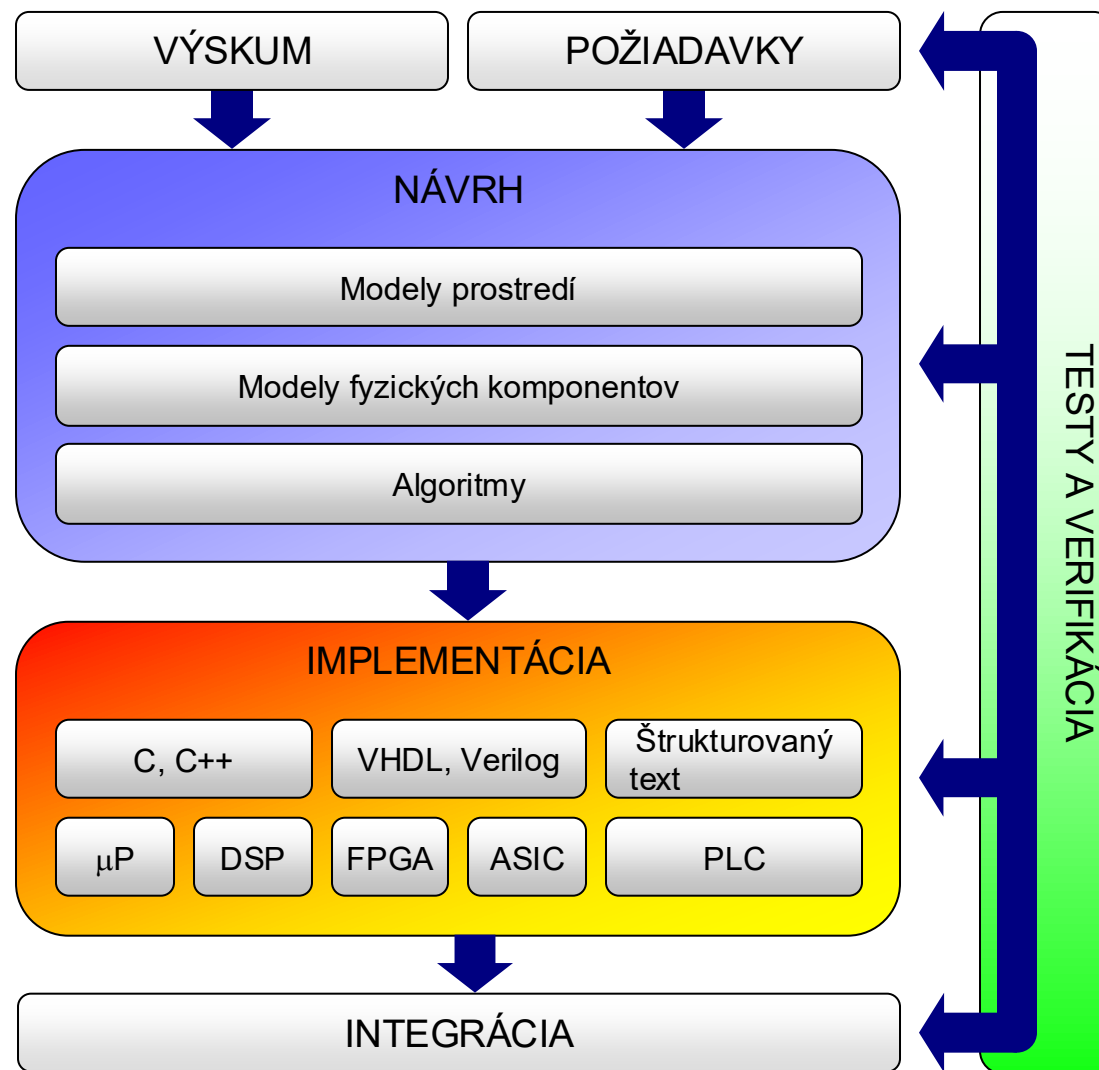
Automatizácia

Príklad: Analýza ECG signálu

- Cieľ:
 - Analýza ECG signálu zo zašumených a posunutých dát
- Postup:
 - Načítať dáta
 - Odstránenie trendu
 - Vyhľadanie dát
 - Nájdenie extrémov
 - Zdokumentovať výsledky

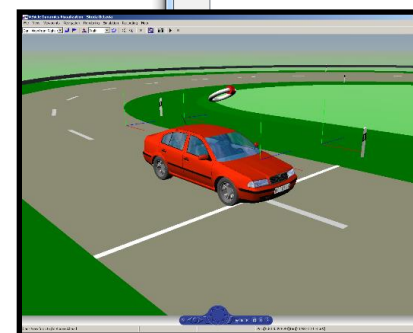
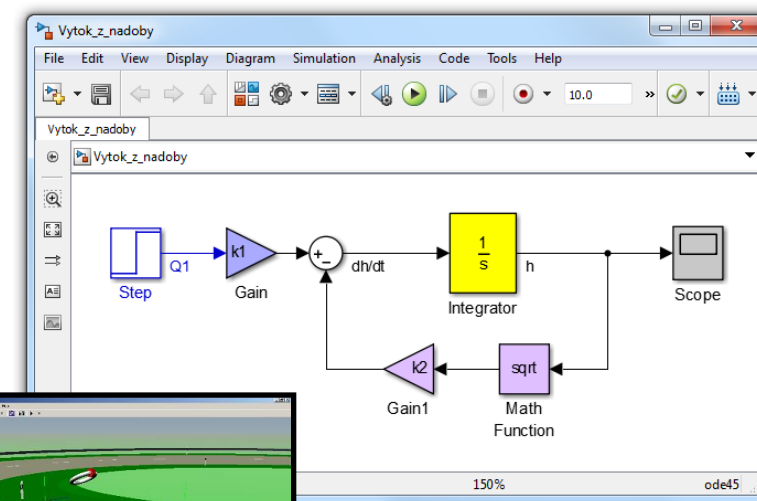
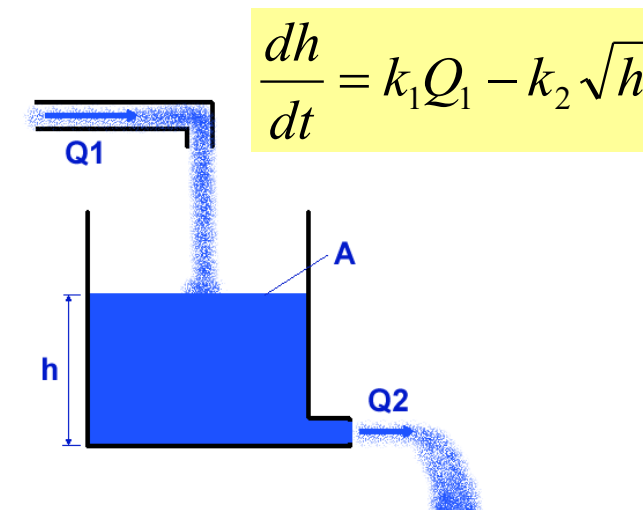


Vývoj metodou Model-Based Design

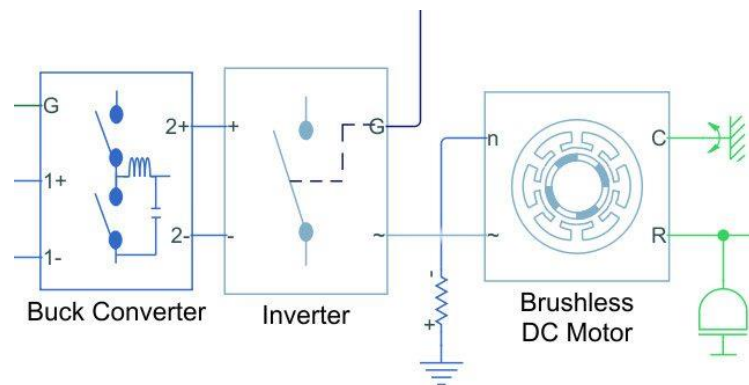


Matematické modelovanie sústav

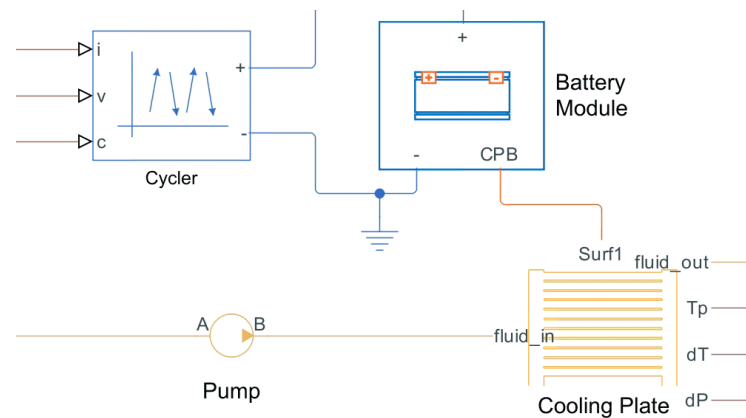
- Simulink
- Opis sústav – algebraické, diferenciálne alebo diferenčné rovnice
- Modelovanie v grafickom prostredí
 - prvky pre spojité a diskrétne systémy
 - knižnica matematických operácií
 - knižnica nelineárnych prvkov
 - knižnica vstupov a výstupov
- Jednoduché prepojenie s ďalšími blokmi
- Toolboxy
 - Vlastné sady blokov



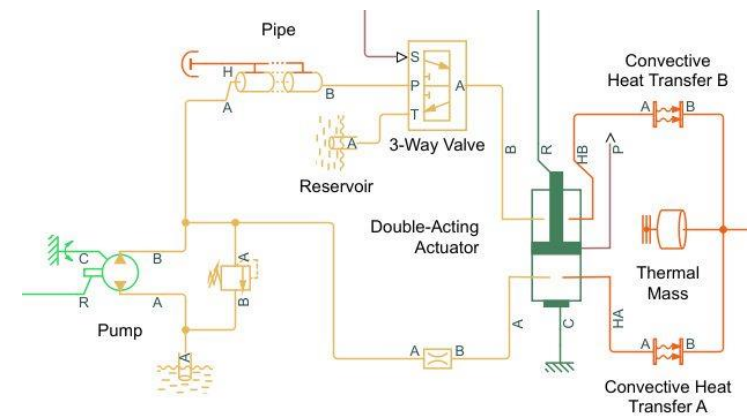
Fyzikálne modelovanie sústav



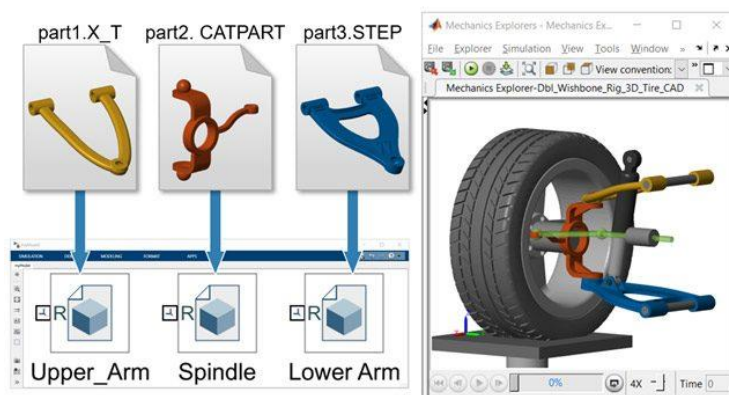
Simscape Electrical



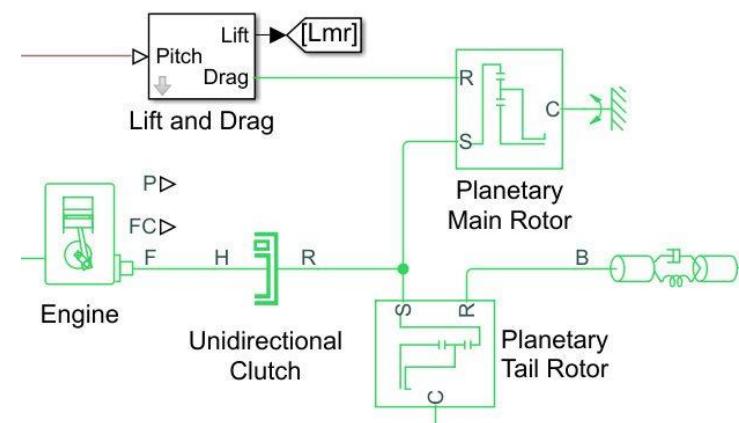
Simscape Battery



Simscape Fluids



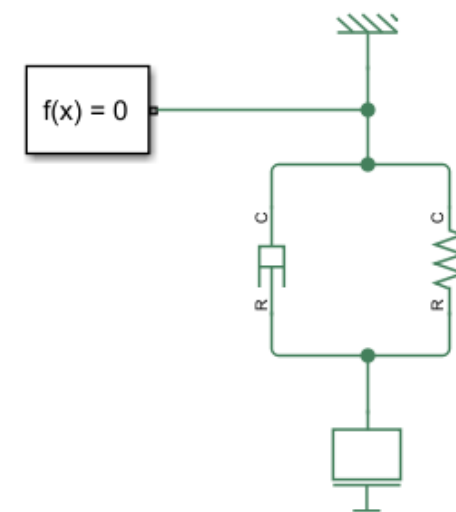
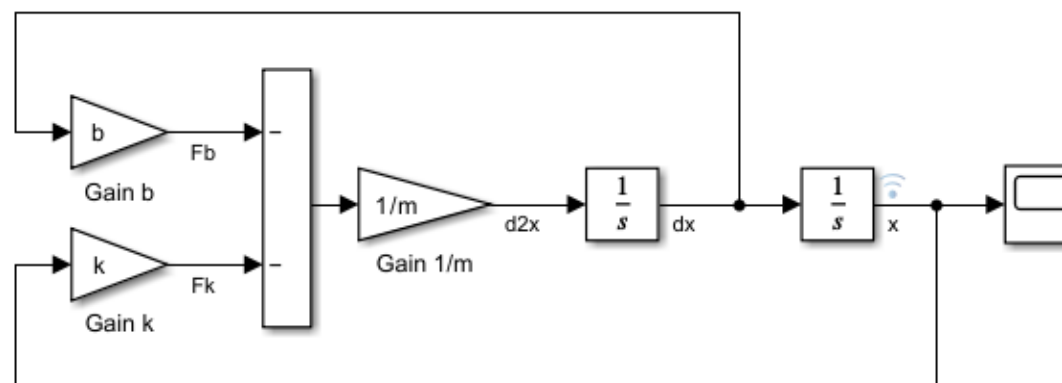
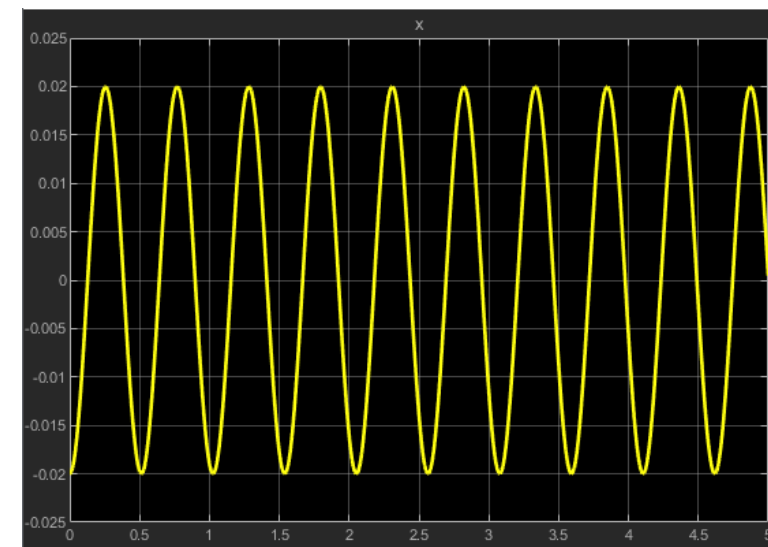
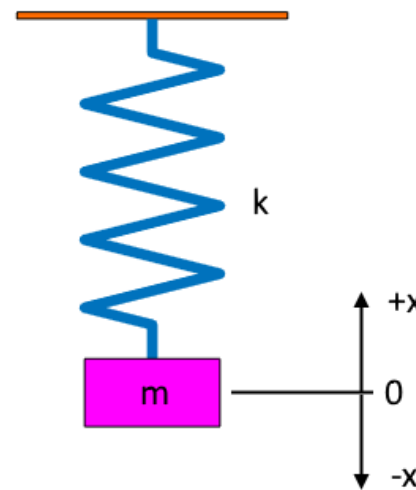
Simscape Multibody



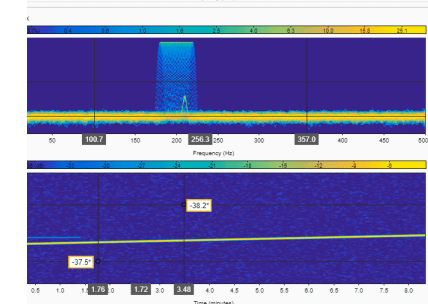
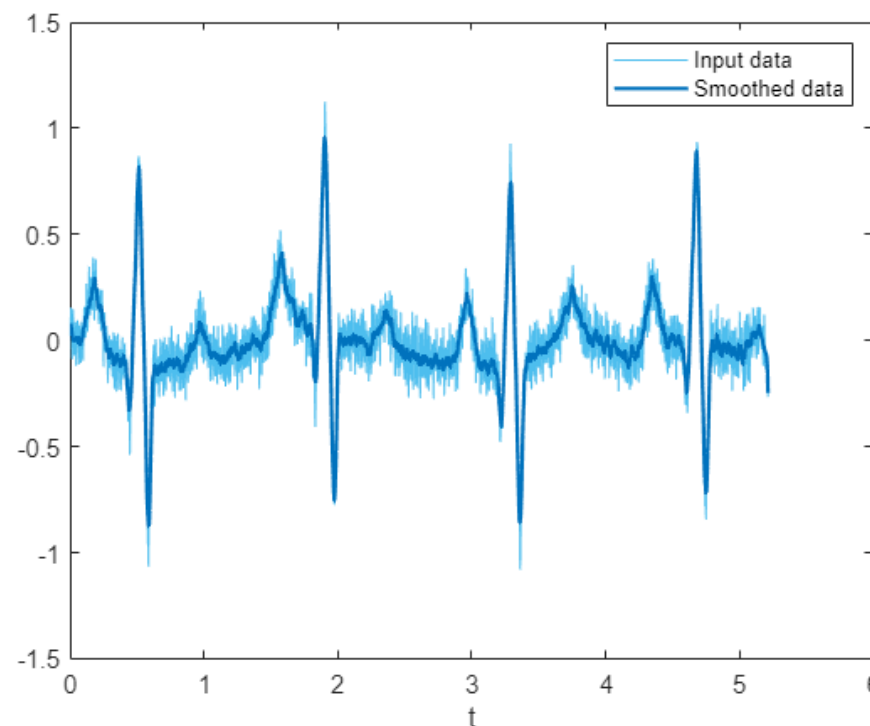
Simscape Driveline

Príklad: Závažie na pružine

- Cieľ:
 - Analýza ECG signálu zo zašumených a posunutých dát
- Postup:
 - Načítať parametre
 - Model v Simulinku
 - Model v Simscape
 - Analýza výsledkov

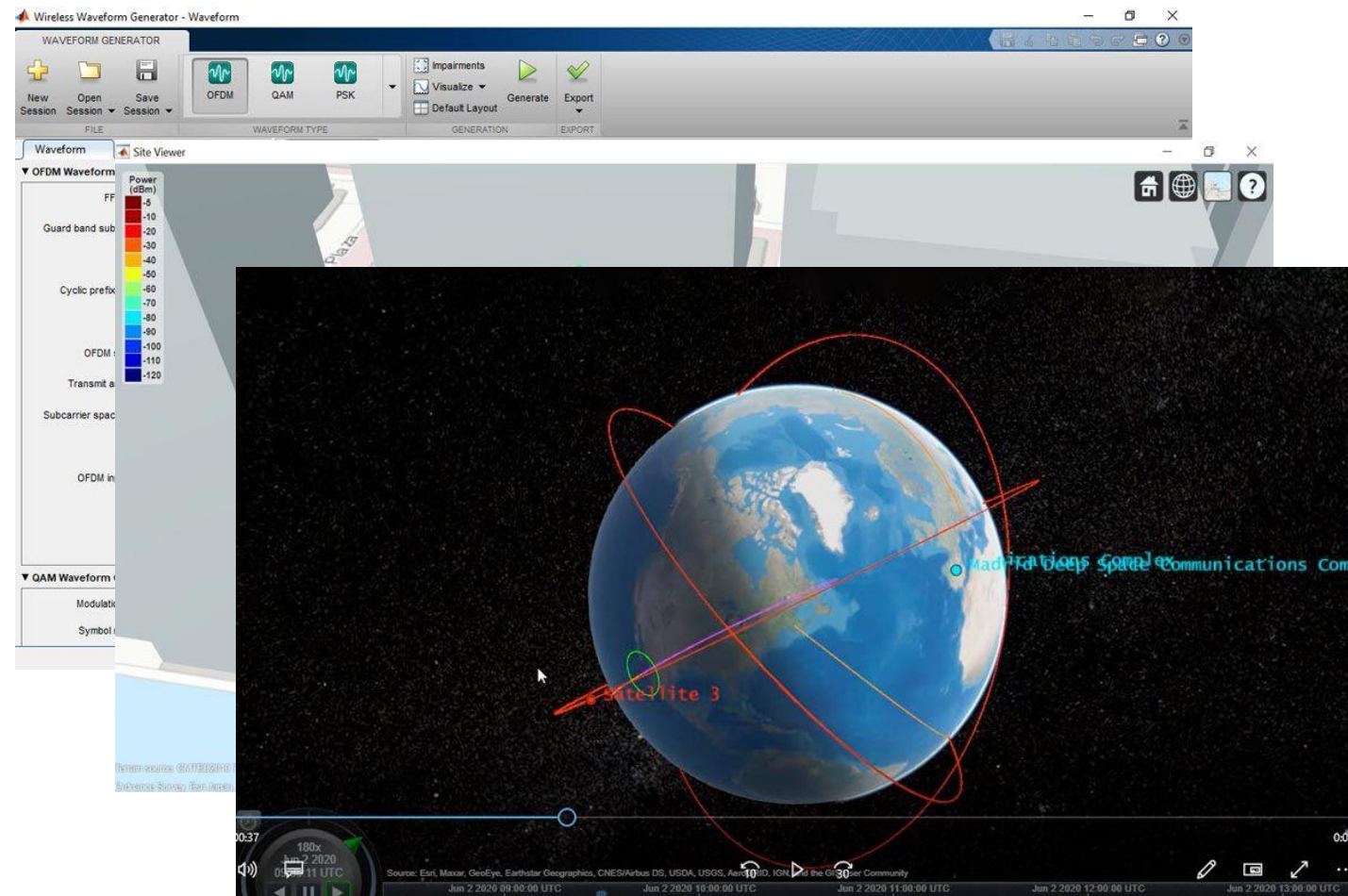


- [illegible]



Informačné a komunikačné technológie

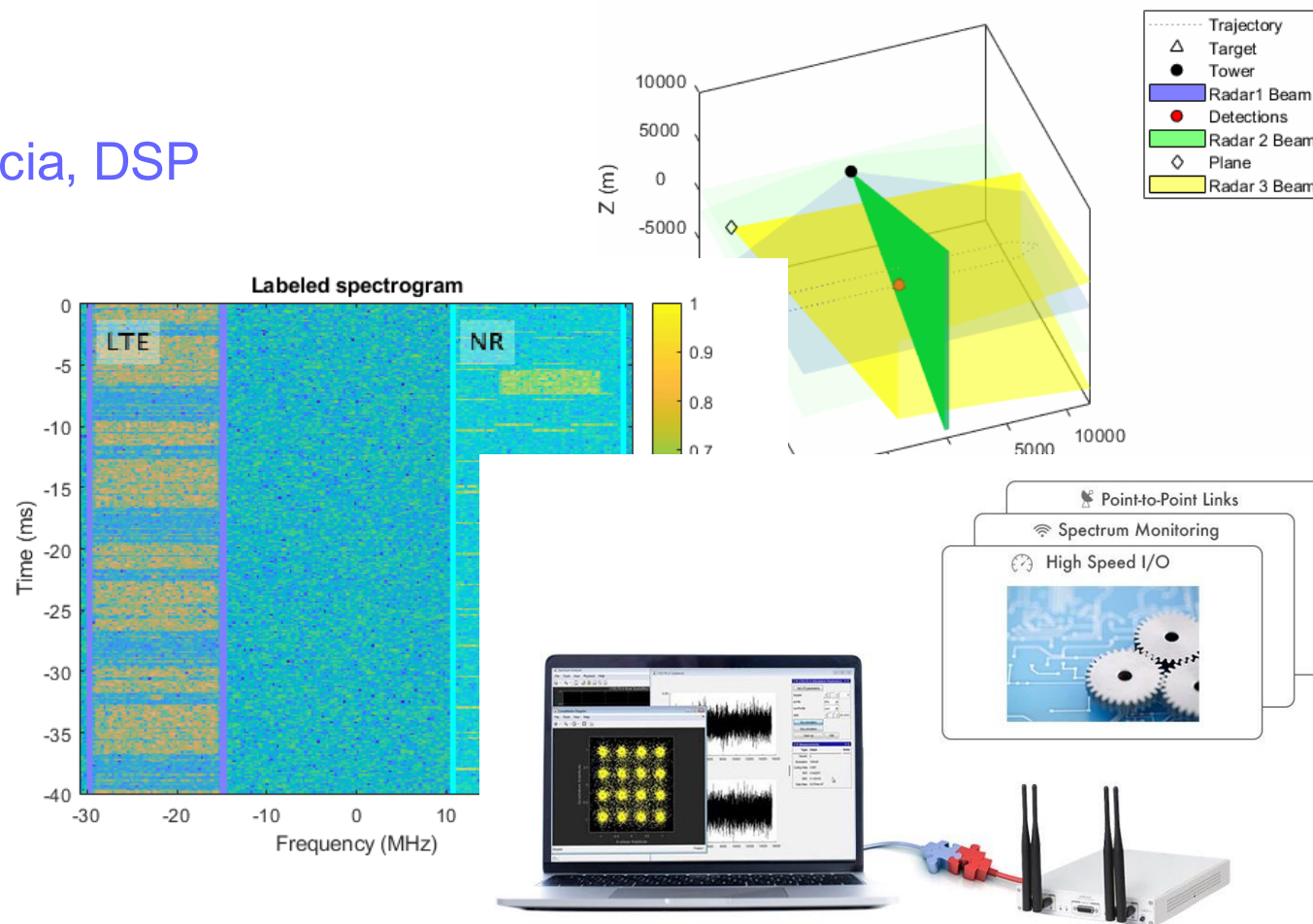
- Spracovanie signálov
 - analýza signálov a meranie
 - filtrácia, DSP
- Modelovanie komunikácie
 - WLAN, 5G, Bluetooth
 - Radar, Satelit, RF



MATLAB, Simulink, Signal Processing Toolbox, Wavelet Toolbox, DSP System Toolbox, WLAN Toolbox, 5G Toolbox, Antenna Toolbox, Satellite Communications Toolbox, Bluetooth Toolbox, RF Toolbox, Wireless Testbench, Deep Learning Toolbox, HDL Coder

Informačné a komunikačné technológie

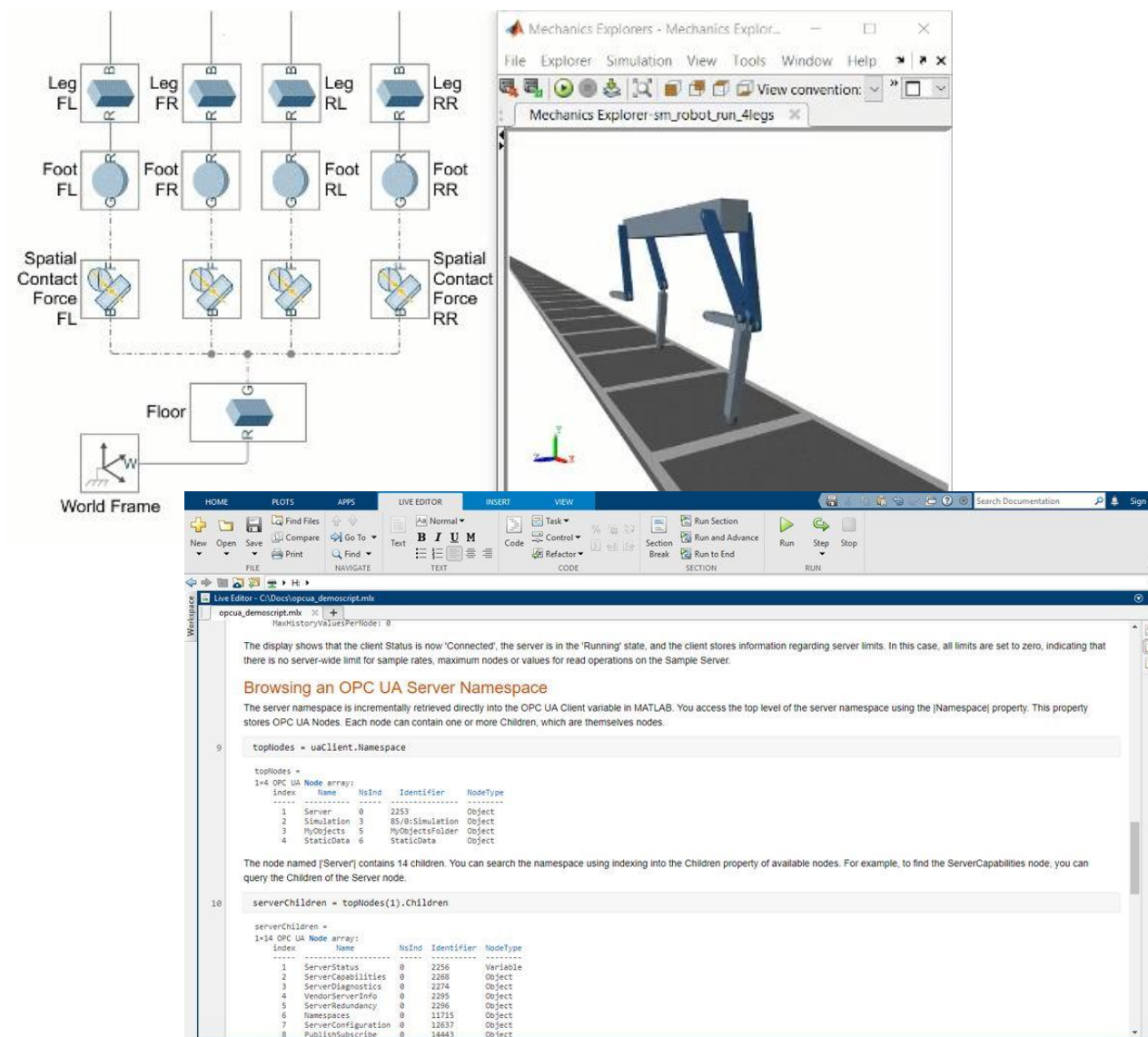
- Spracovanie signálov
 - analýza signálov a meranie, filtrácia, DSP
- Modelovanie komunikácie
 - WLAN, 5G, Bluetooth
 - Radar, Satelit, RF
- Algoritmy
 - fúzia a trackovanie
 - audio, umelá inteligencia
- Overovanie
 - generovanie kódu, SDR, HDL



MATLAB, Simulink, Signal Processing Toolbox, DSP System Toolbox, WLAN Toolbox, 5G Toolbox, Antenna Toolbox, Satellite Communications Toolbox, Bluetooth Toolbox, Wireless Testbench, Statistics and Machine Learning Toolbox, Deep Learning Toolbox

Robotika a kybernetika

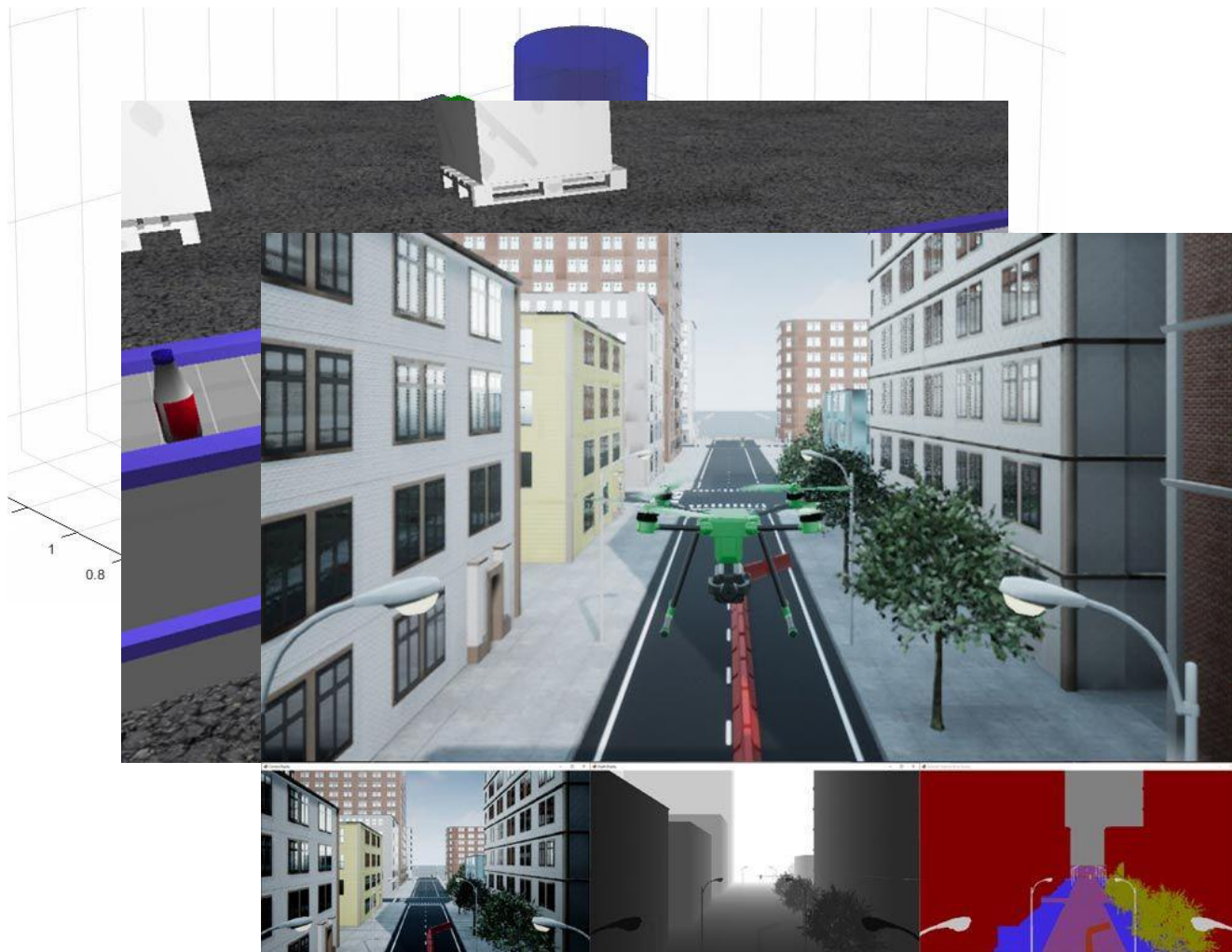
- Modelovanie systémov
 - mechanické, elektrické, ...
- Priemyselné štandardy
 - Logické automaty, OPC



Simulink, Simscape Multibody, Statistics and Machine Learning Toolbox, Deep Learning Toolbox, Industrial Communication Toolbox, Robotics System Toolbox, Navigation Toolbox, ROS Toolbox, RoadRunner, Control System Toolbox, System Identification Toolbox

Robotika a kybernetika

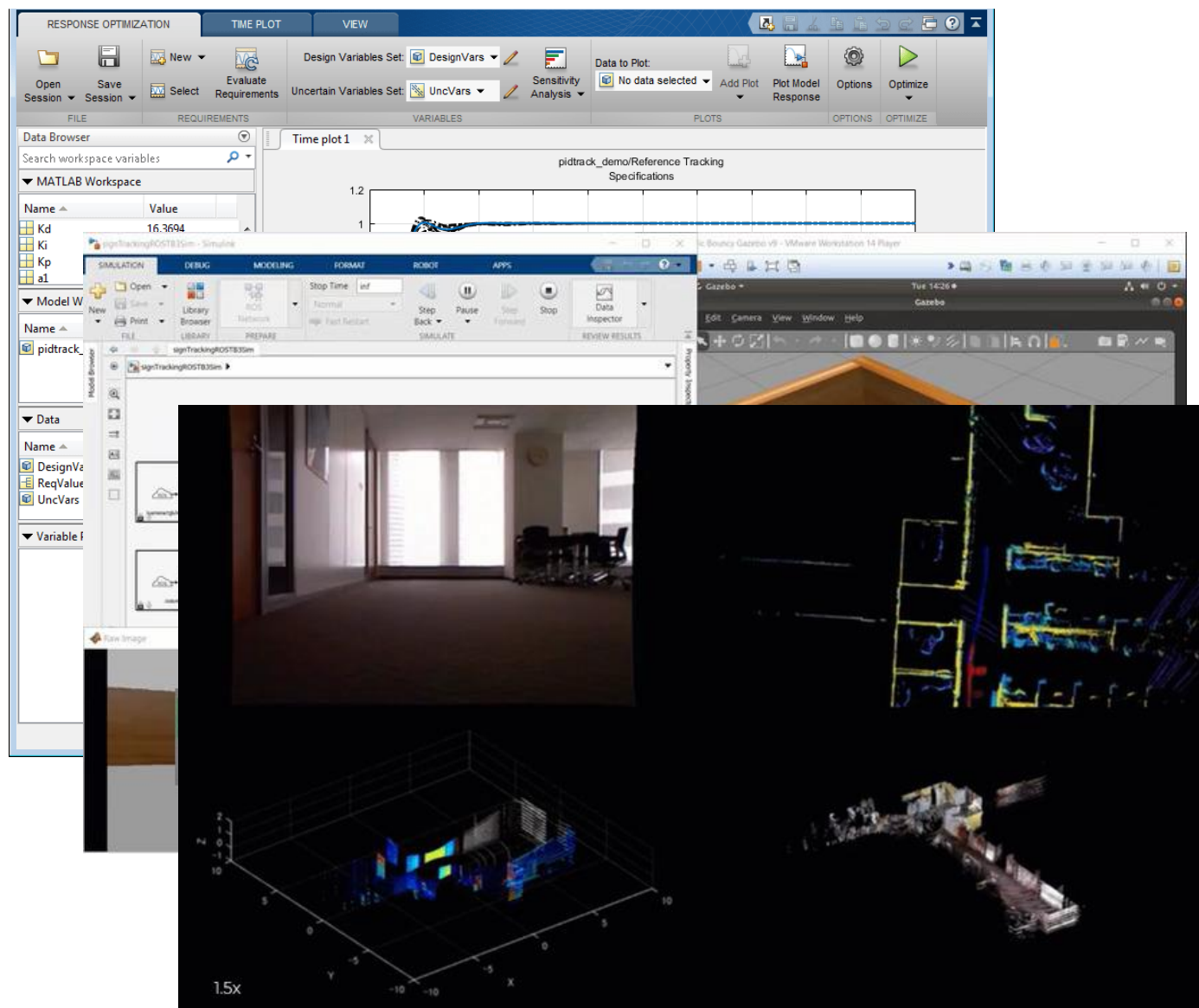
- Modelovanie systémov
 - mechanické, elektrické, ...
- Priemyselné štandardy
 - Logické automaty, OPC
- Robotické aplikácie
 - Manipulátory
 - Mobilné roboty
 - UAV



Simulink, Simscape Multibody, Statistics and Machine Learning Toolbox, Deep Learning Toolbox, Industrial Communication Toolbox, Robotics System Toolbox, Navigation Toolbox, ROS Toolbox, RoadRunner, Control System Toolbox, System Identification Toolbox

Robotika a kybernetika

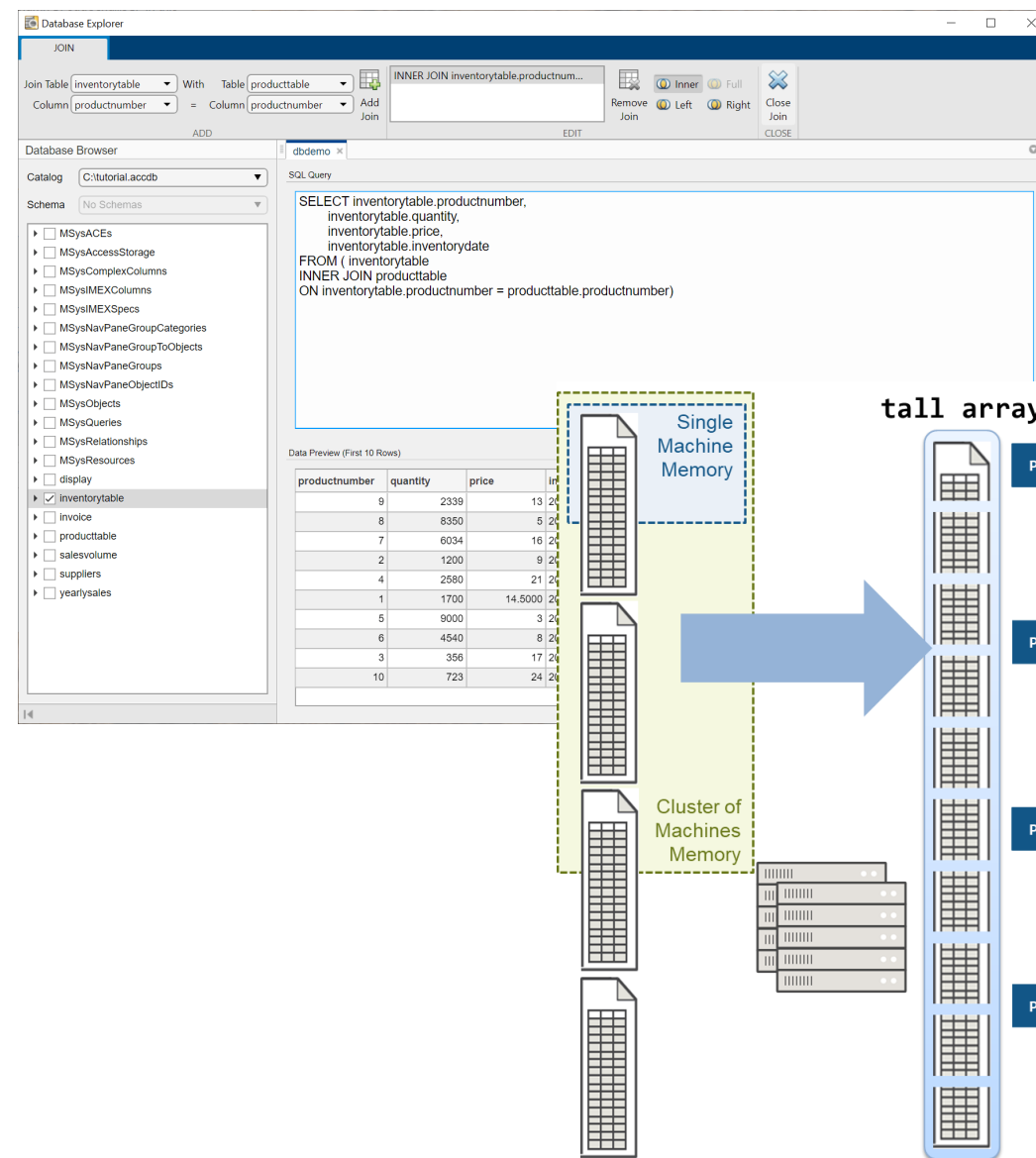
- Modelovanie systémov
 - mechanické, elektrické, ...
- Priemyselné štandardy
 - Logické automaty, OPC
- Robotické aplikácie
 - Manipulátory, Mobilné roboty, UAV
- Algoritmy
 - identifikácia a riadenie
 - počítačové videnie, lidar, AI
 - navigácia, plánovanie



Simulink, Simscape Multibody, Statistics and Machine Learning Toolbox, Deep Learning Toolbox, Industrial Communication Toolbox, Robotics System Toolbox, Navigation Toolbox, ROS Toolbox, RoadRunner, Control System Toolbox, System Identification Toolbox

Aplikovaná informatika

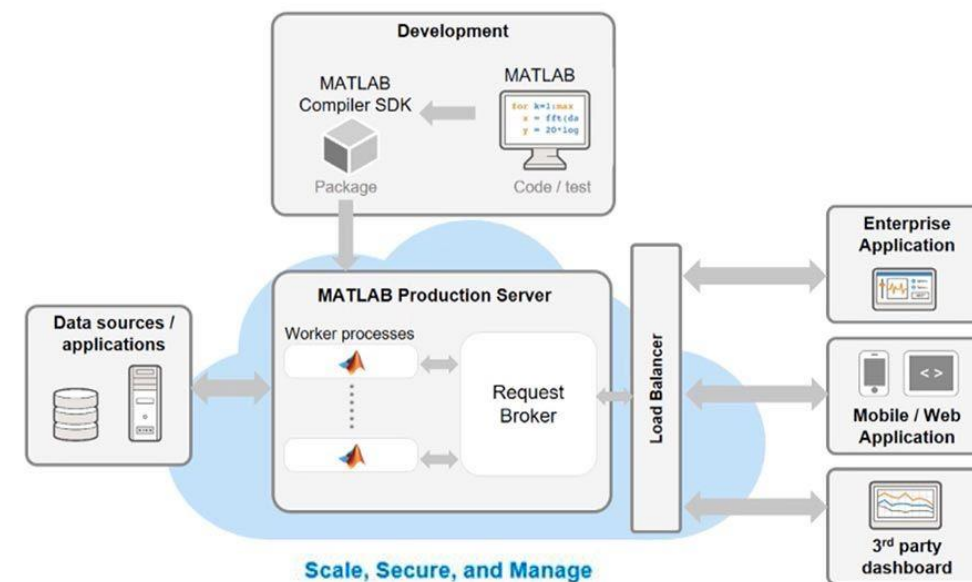
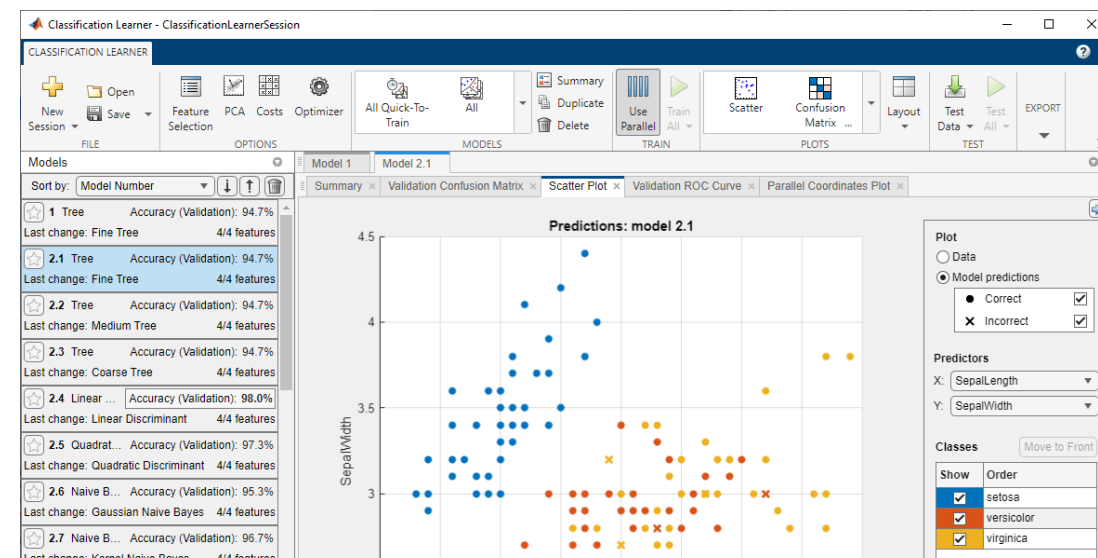
- Práce s datami
 - Databáze, Big Data



MATLAB, Database Toolbox, Statistics and Machine Learning Toolbox, Deep Learning Toolbox, MATLAB Coder, Simulink Coder, Embedded Coder, MATLAB Compiler, MATLAB Compiler SDK, ThingSpeak, Stateflow

Aplikovaná informatika

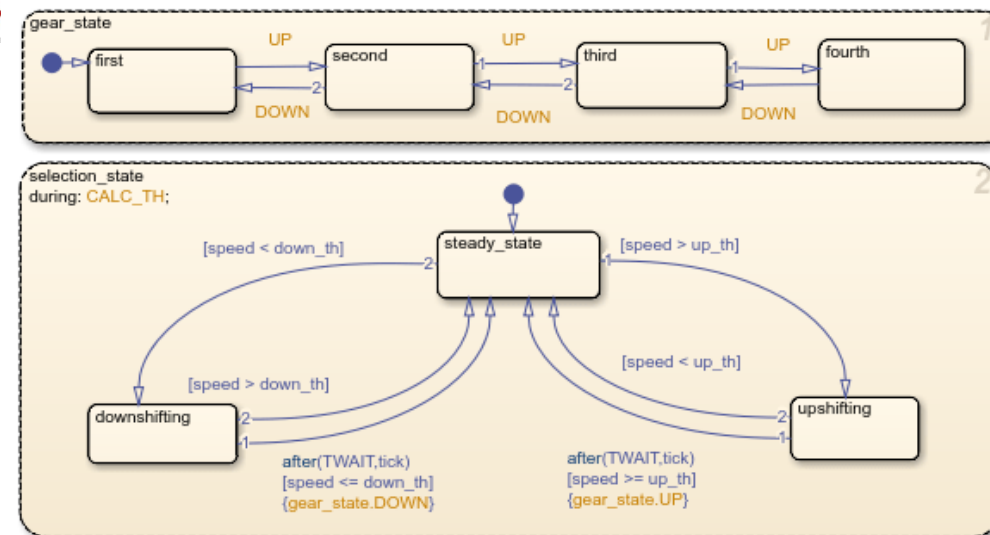
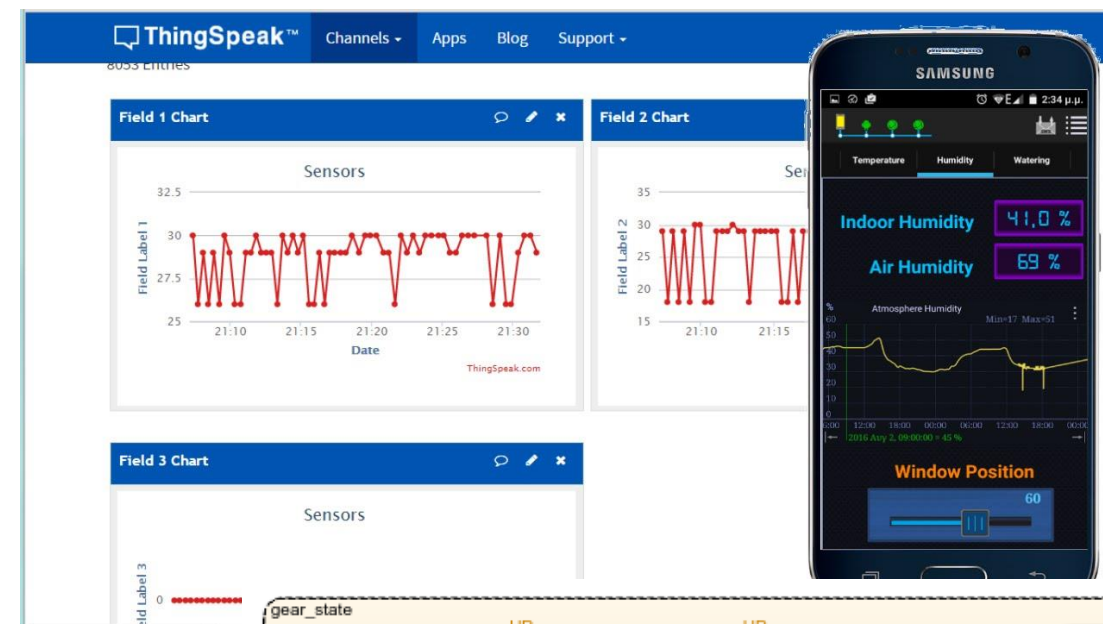
- Práca s dátami
 - Databázy, Big Data
- Tvorba algoritmov
 - Deep learning, Machine learning
- Implementácia algoritmov
 - Podnikové systémy, integrácia kódu



MATLAB, Database Toolbox, Statistics and Machine Learning Toolbox, Deep Learning Toolbox, MATLAB Coder, Simulink Coder, Embedded Coder, MATLAB Compiler, MATLAB Compiler SDK, ThingSpeak, Stateflow

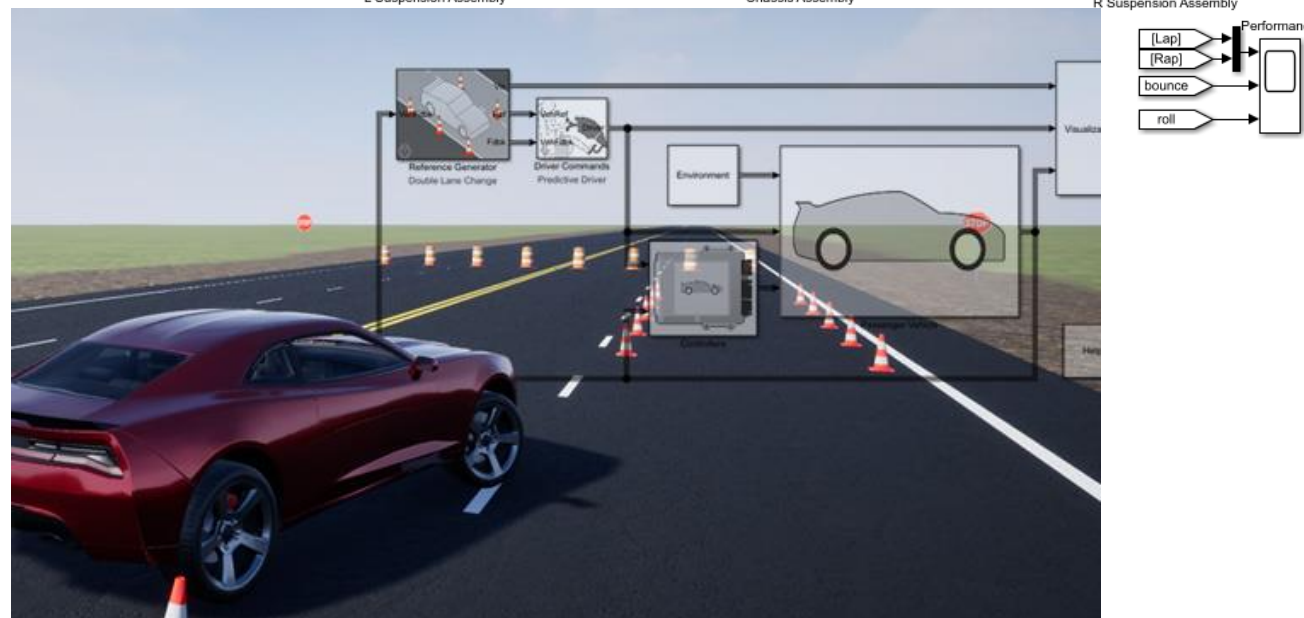
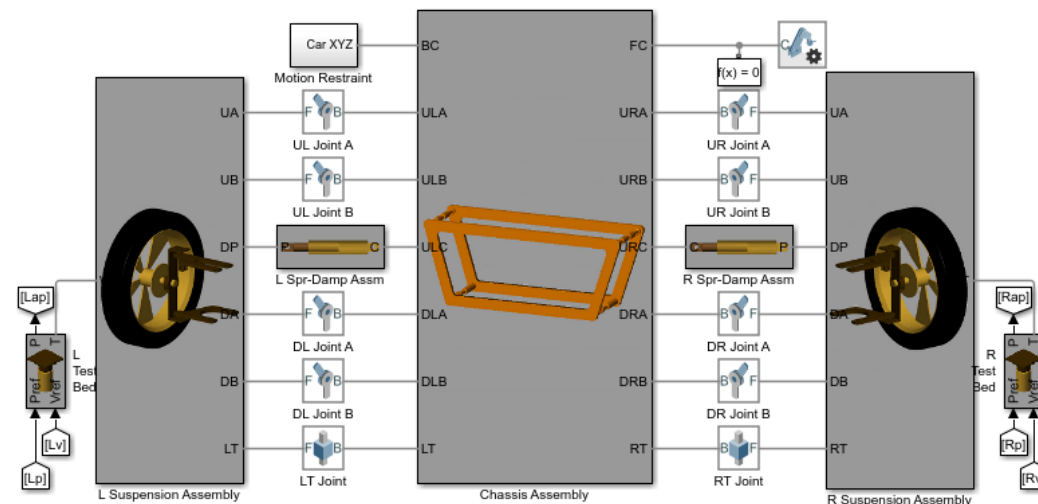
Aplikovaná informatika

- Práca s dátami
 - Databázy, Big Data
- Tvorba algoritmov
 - Deep learning, Machine learning
- Implementácia algoritmov
 - Podnikové systémy, integrácia kódu
- Internet of Things
- Udalostné systémy



Automobilová mechatronika

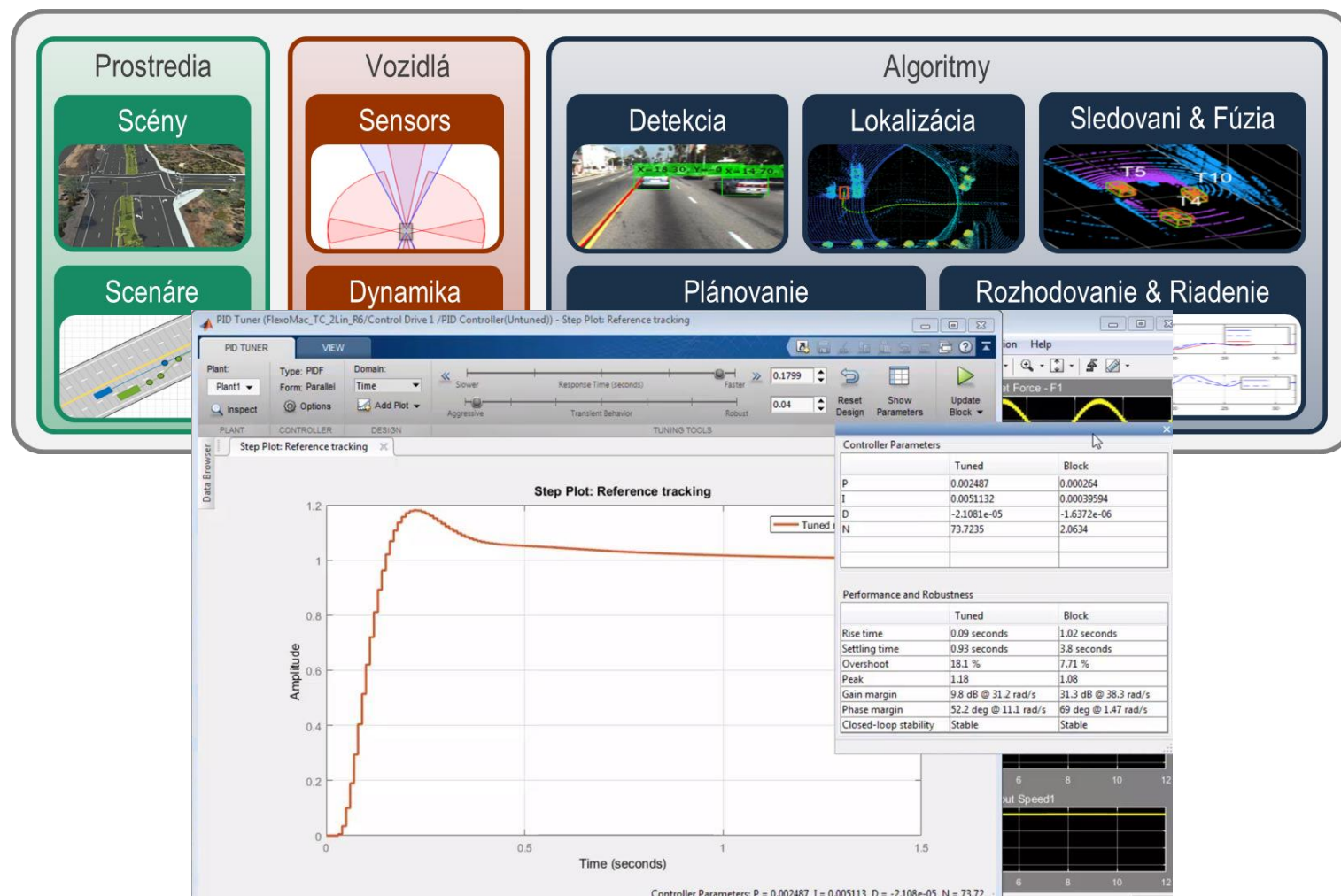
- Modelovanie systémov
 - mechanické, elektrické, ...
- Modelovanie vozidiel
 - virtuálne, elektrické vozidlo



Simscape, Simscape Multibody, Simscape Electrical, Powertrain Blockset, Vehicle Dynamics Blockset, Automated Driving Toolbox, RoadRunner, Control System Toolbox, Model Predictive Control Toolbox, Navigation Toolbox, Sensor Fusion and Tracking Toolbox, Statistics and Machine Learning Toolbox, Deep Learning Toolbox

Automobilová mechatronika

- Modelovanie systémov
 - mechanické, elektrické, ...
- Modelovanie vozidiel
 - virtuálne, elektrické vozidlo
- Autonómne systémy
 - virtuálne svety
 - algoritmy, AI
 - generovanie kódu
- Riadiace systémy

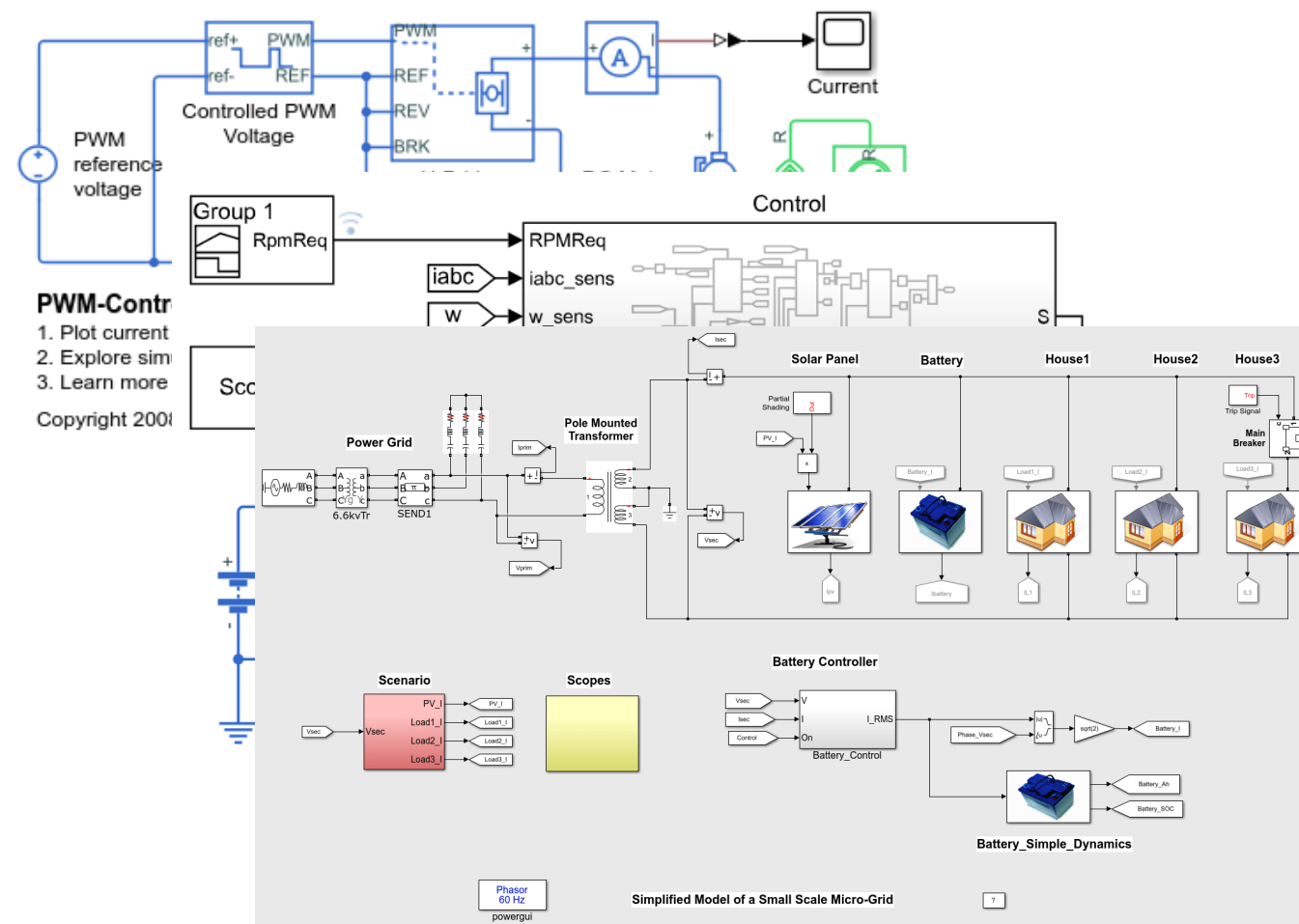


Simscape, Simscape Multibody, Simscape Electrical, Powertrain Blockset, Vehicle Dynamics Blockset, Automated Driving Toolbox, RoadRunner, Control System Toolbox, Model Predictive Control Toolbox, Navigation Toolbox, Sensor Fusion and Tracking Toolbox, Statistics and Machine Learning Toolbox, Deep Learning Toolbox

Elektroenergetika, Elektronika, Elektrotechnika

- Modelovanie

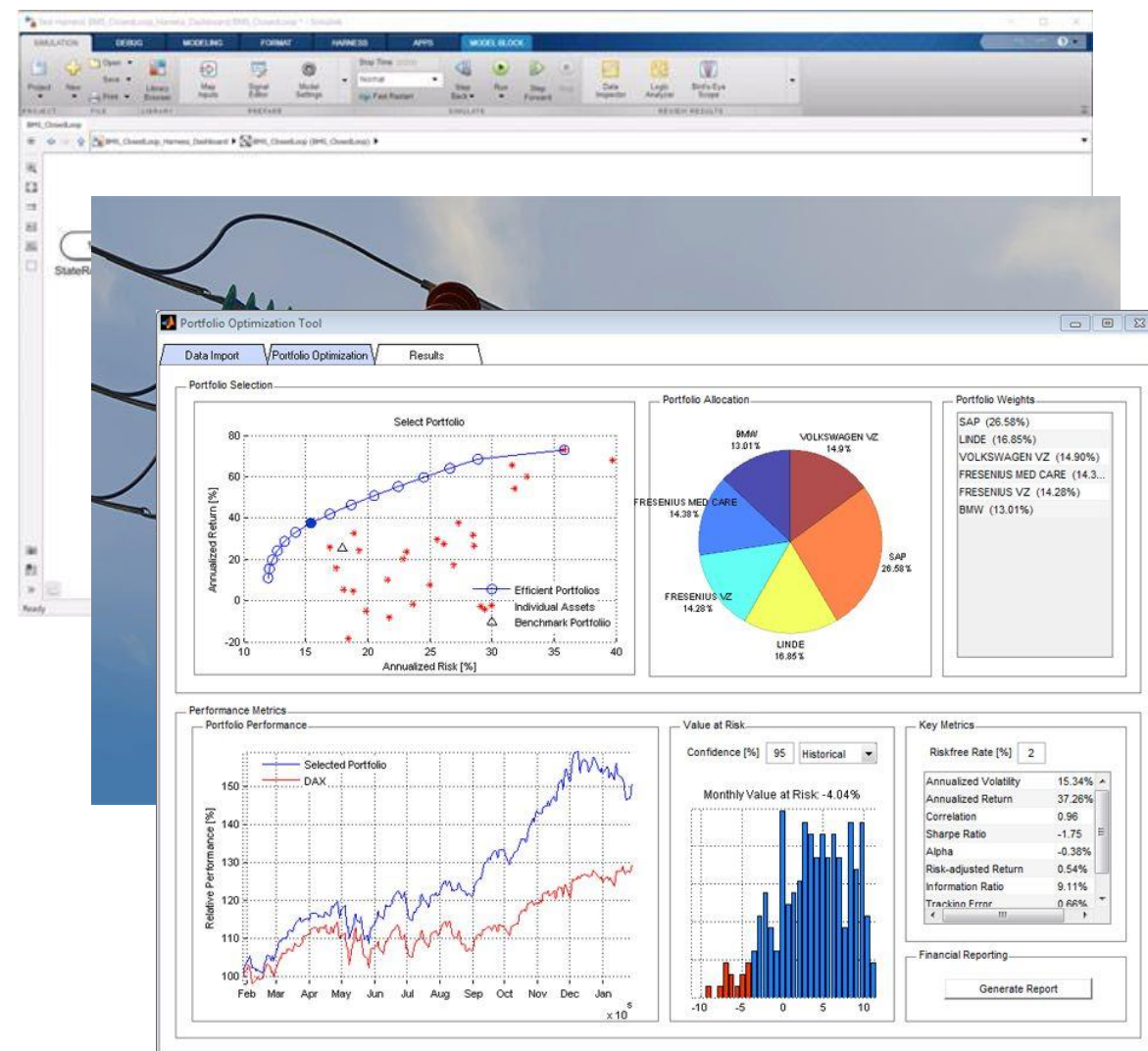
- elektrické obvody, polovodiče
- motory, elektrizačné sústavy



-

Elektroenergetika, Elektronika, Elektrotechnika

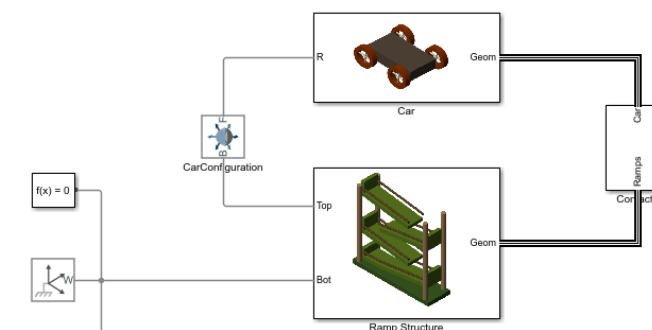
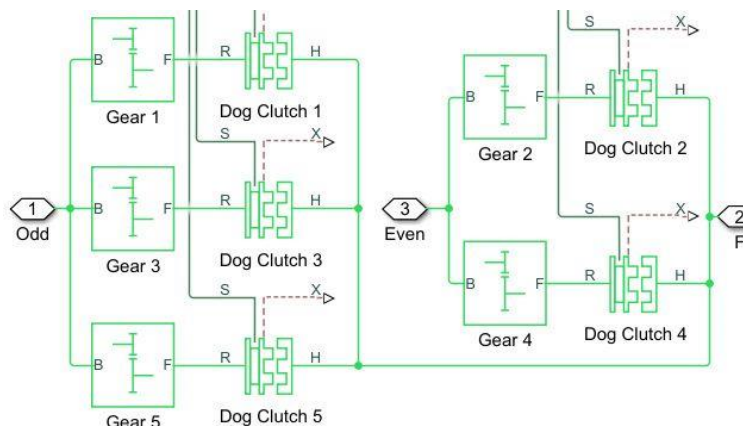
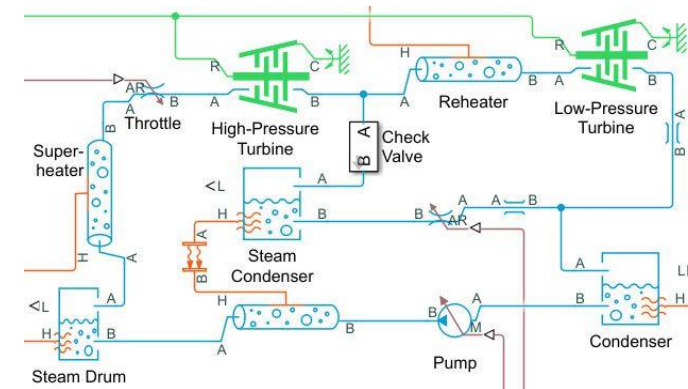
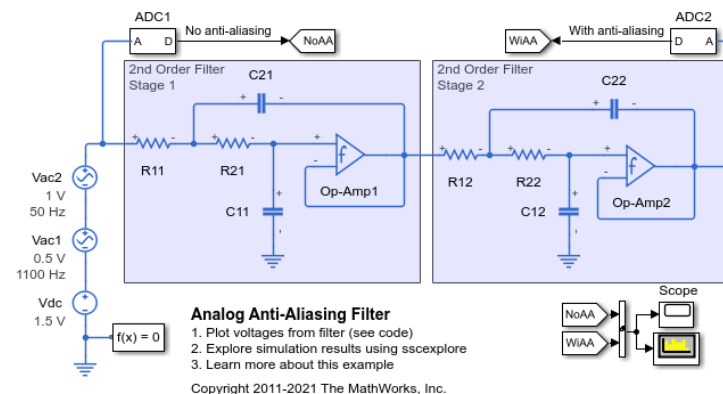
- Modelovanie
 - elektrické obvody, polovodiče
 - motory, elektrizačné sústavy
- Udržateľná energia
 - solárne panely, výroba vodíka, mikrogrid
- Riadenie
 - motorov, meničov, baterií
- Algoritmy
 - prediktívna údržba, monitorovanie
 - obchodovanie z energiou



Simscape, Simscape Electrical, Signal Processing Toolbox, Predictive Maintenance Toolbox, Computer Vision Toolbox, Statistics and Machine Learning Toolbox, Deep Learning Toolbox, Optimization Toolbox, SoC Blockset, Mixed-Signal Blockset, SerDes Toolbox

Jadrové a fyzikálne inžinierstvo

- Fyzikálne modelovanie
 - mechanika, elektriika
 - hydraulika, prevodovky



Using the Spatial Contact Force Block - Bumper Car

- Explore simulation results using [sscexplore](#)
- Open the subsystem containing the Spatial Contact
- Force blocks between the car and the top ramp
- Learn more about this example
- Learn more about the [Spatial Contact Force Block](#)
- Learn more about [multibody modeling](#)

Jadrové a fyzikálne inžinierstvo

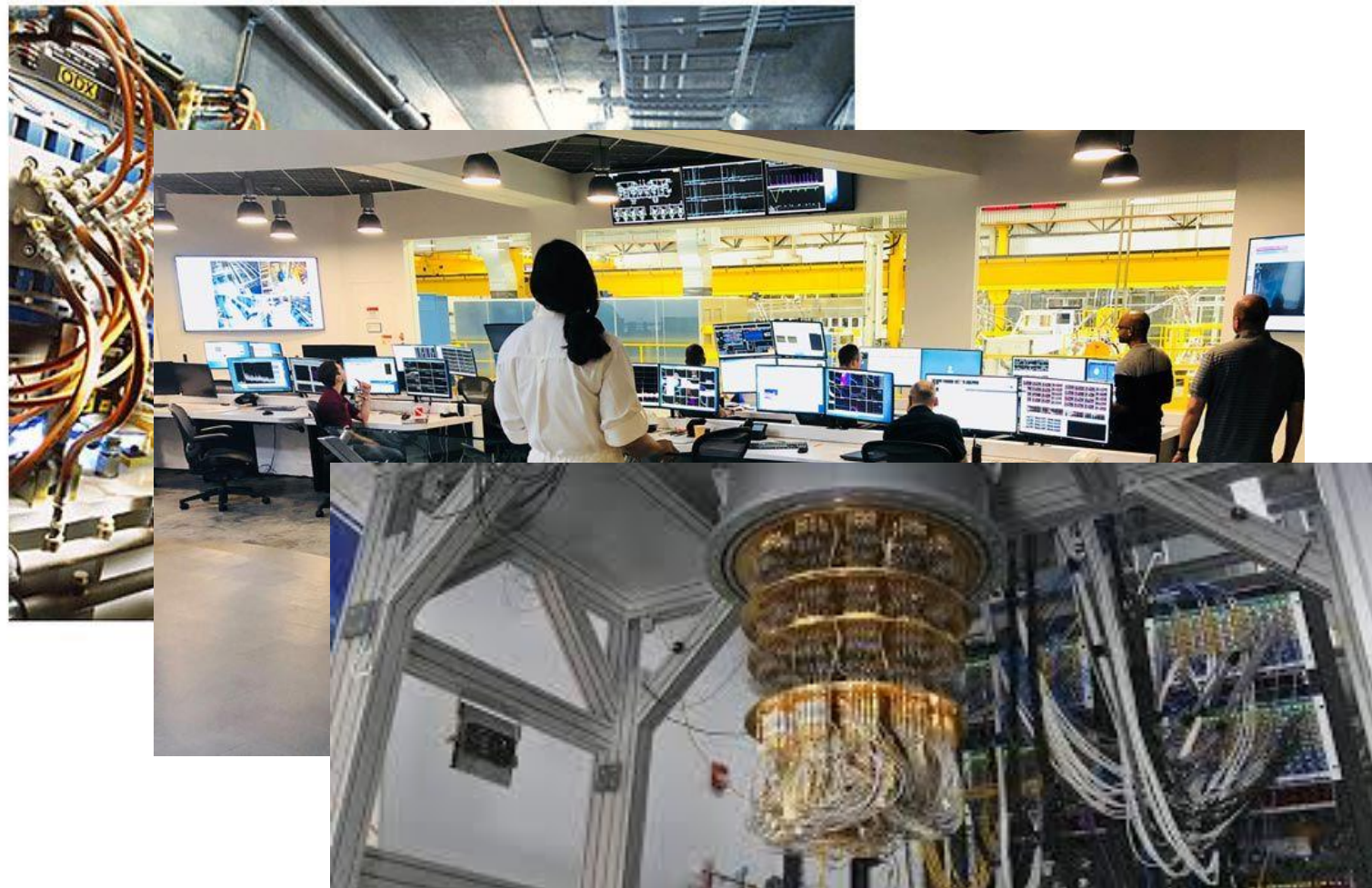
- Fyzikálne modelovanie
 - mechanika, električka
 - hydraulika, prevodovky
- Zariadenia
 - komunikácia, analýza dát
 - riadenie experimentov



Simulink, Simscape, Simscape Driveline, Simscape Electrical, Simscape Fluids, Simscape Multibody, Data Acquisition Toolbox, Statistics and Machine Learning Toolbox, Deep Learning, Symbolic Math Toolbox, Signal Processing Toolbox

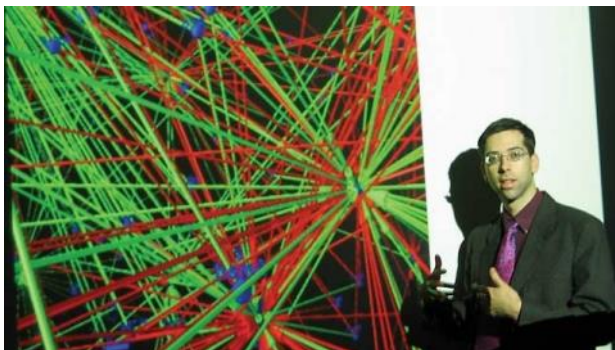
Jadrové a fyzikálne inžinierstvo

- Fyzikálne modelovanie
 - mechanika, električka
 - hydraulika, prevodovky
- Zariadenia
 - komunikácia, analýza dát
 - riadenie experimentov
- Simulácie
 - urýchľovače častíc
 - nukleárna fúzia
 - Quantum Computing
- Analýza astronomických objektov



Simulink, Simscape, Simscape Driveline, Simscape Electrical, Simscape Fluids, Simscape Multibody, Data Acquisition Toolbox, Statistics and Machine Learning Toolbox, Deep Learning, Symbolic Math Toolbox, Signal Processing Toolbox

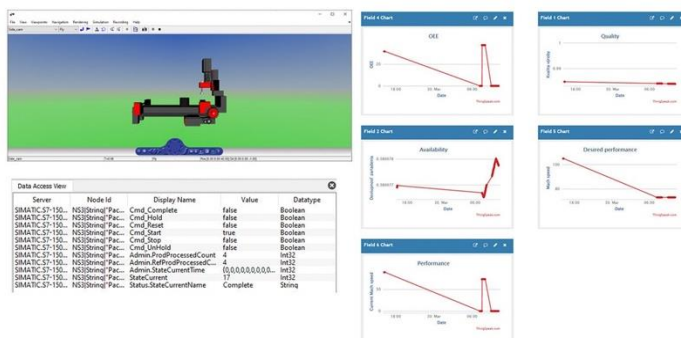
Univerzity poháňajú priemysel



Massachusetts Institute of Technology Integrates Cancer Research in the Lab and Classroom



Mondragon University Students Build Practical Engineering Skills Through Project-Based Learning



Project-Based Learning Using MATLAB and ThingSpeak at Slovak University of Technology



Cornell Bioacoustics Scientists Develop a High-Performance Computing Platform for Analyzing Big Data

https://www.mathworks.com/company/user_stories/search.html

MATLAB

– využitie počas celého štúdia ... aj potom

Stredné školy

Univerzita

Výskum

Prax



MATLAB – nasadenie v rôznych oblastiach

- **Matematika** – symbolická matematika, numerická matematika, vizualizácia funkcií
- **Fyzika** – spracovanie dát z experimentov, štatistika, grafická reprezentácia
- **Dátová analytika** – machine learning, regresné modely
- **Spracovanie obrazu** – fotografia, videozáznam
- **Dynamické systémy** – analýza, návrh riadiacich algoritmov, prepojenie s reálnymi objektami
- **Spracovanie signálov** – filtrácia
- **Fyzikálne modelovanie** – hydraulika, mechanika, elektrotechnika

MATLAB – nasadenie v rôznych oblastiach

- **Umelá inteligencia** – fuzzy, neurónové siete, deep learning
- **Ekonomické vedy** – risk management, ekonometria, prepojenie s Bloomberg a Yahoo finance
- **Implementácia na HW** – IoT, PLC, Arduino, Raspberry Pi, LEGO, Xilinx, Intel ...
- **Udalostné systémy** – návrh riadiacich algoritmov, prepojenie s PLC
- **Big Data**
- **Paralelné výpočty**

MATLAB – nie je len „hračka pre vedcov“

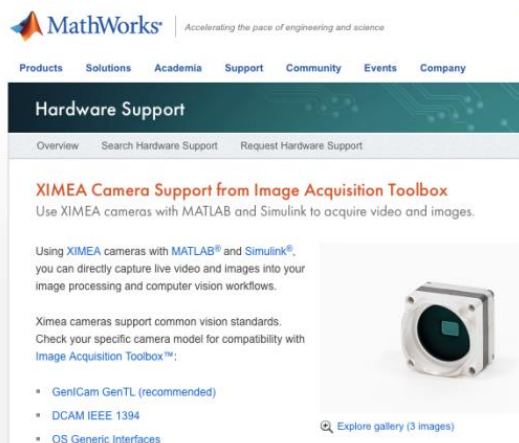
- Profesionálny nástroj pre inžinierov
- Žiadaná zručnosť u zamestnávateľov ... áno aj v SR a ČR
- Nedostatok absolventov so znalosťou MATLABu
- Zamestnávatelia:
 - Schaeffler
 - Siemens
 - Honeywell
 - Continental
 - IEE
 - ON Semiconductor
 - Porsche
 - B/S/H
 - ...

MATLAB – úspešné slovenské firmy

- Ximea
- VONSCH
- R-SYS
- Podpora začínajúcich firiem
 - StartUp program
 - TOMARK, Zuri, Photoneo, CEIT ...

Na rozdiel od predchádzajúcich vývojových procesov sa v tomto prípade veľmi zjednodušil celkový proces výskumu a vývoja, ktorý v konečnom dôsledku viedol k výraznému skráteniu času potrebnému na uvedenie produktu na trh.

Jakub Vonkomer - VONSCH



Kde sa používa MATLAB



SIEMENS



SCHAEFFLER



NÁRODNÁ BANKA SLOVENSKA
EUROSYSTEM



Univerzity s licenciou Campus-Wide License



Čo prináša CWL

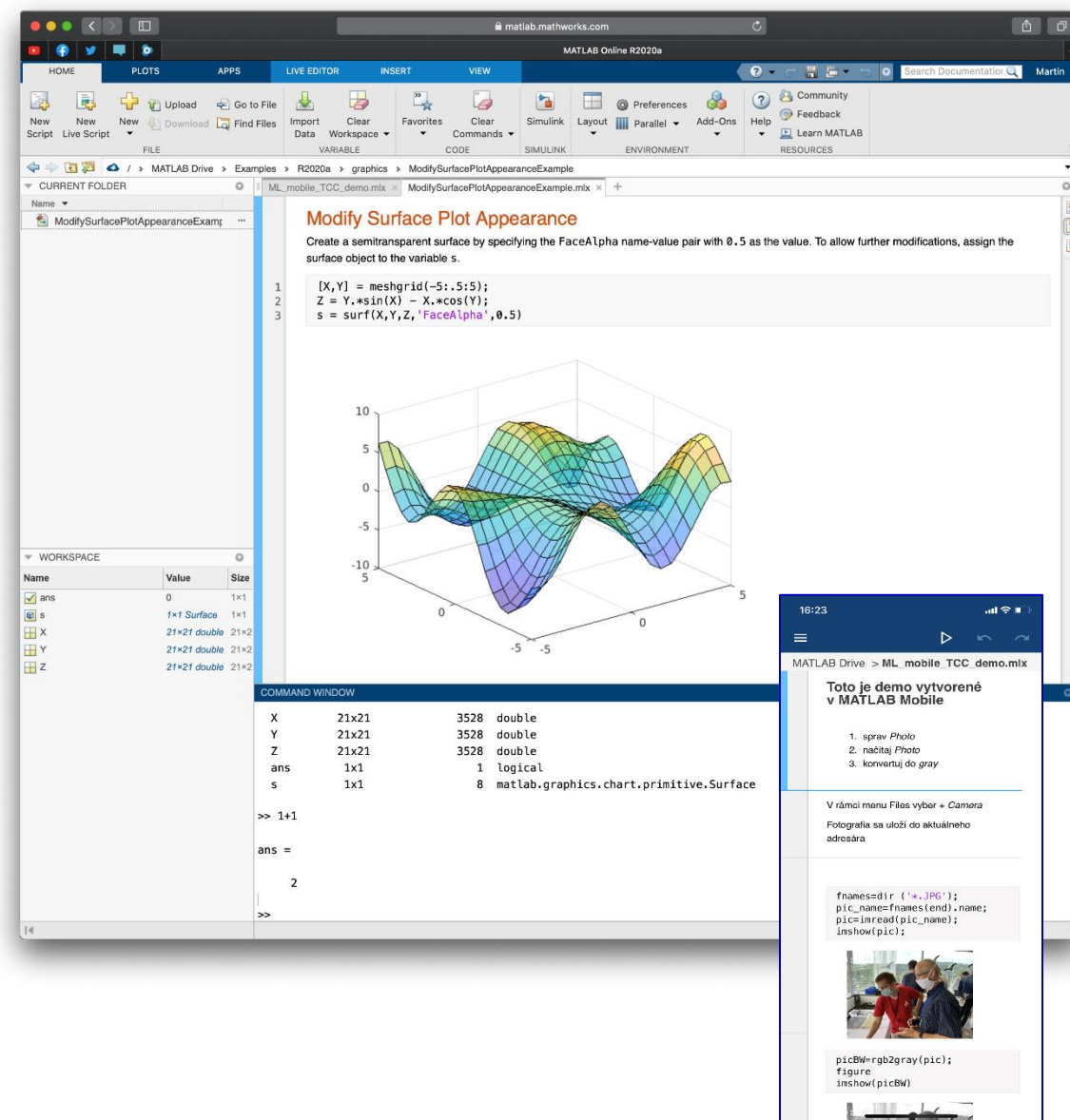
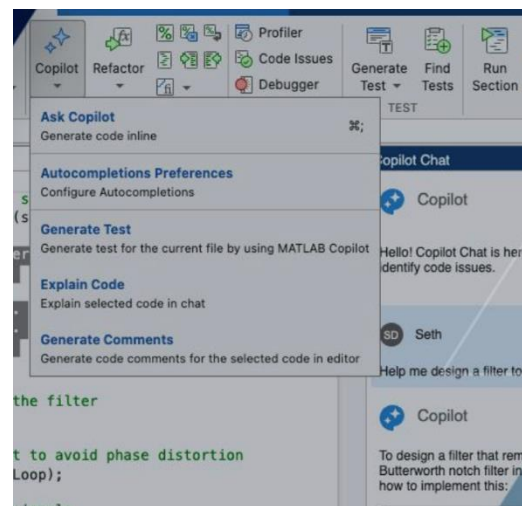
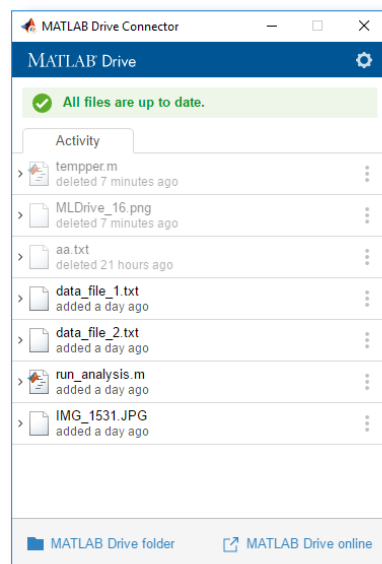
- Študenti

- Úplný prístup k MATLABu a všetkým Toolboxom na univerzite
- Možnosť inštalácie na vlastné počítače
- Možnosť inštalovať na počítače v spoločných priestoroch (internáty, knižnica, klubovne, ...)
- Overenie algoritmov na low cost hw (Arduino, LEGO, Raspberry Pi, micro:bit ...)
- Odpadá pokušenie používania nelegálneho softvéru
- Vznik komunity študentov (kluby, makerzone, ...)
- Zapájanie sa do súťaží (aj medzinárodných)
- Kooperácia so študentami z iných univerzít

Jednotný
dorozumievací
jazyk

Čo prináša CWL

- Prístup k online službám
 - [MATLAB Copilot](#)
 - [MATLAB Online](#)
 - [MATLAB Mobile](#)
 - [MATLAB Drive \(20GB\)](#)



Campus-Wide License

Slovak University of Technology in Bratislava

[Get Software](#) [Learn MATLAB](#) [Teach with MATLAB](#) [What's New](#)

MATLAB Access and Support for Everyone at
Slovak University of Technology in Bratislava



MATLAB and Simulink are

- used in 100,000+ companies from market leaders to startups
- referenced in 4 million+ research citations

Where will MATLAB and Simulink take you?

Get MATLAB and Simulink



Prístup pre všetkých!
MATLAB, Simulink, 100+ toolboxov

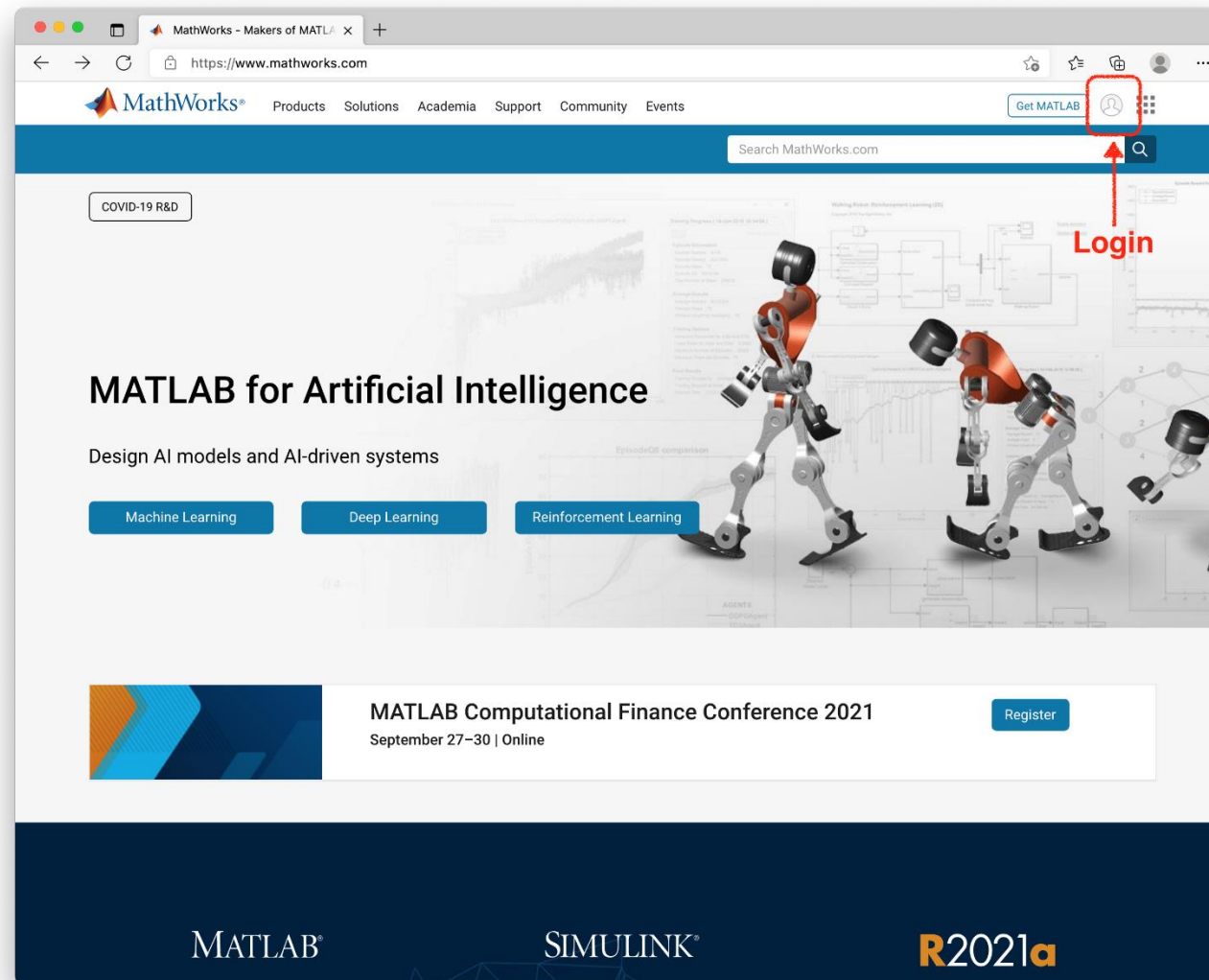
<http://stuba.sk/matlab>

Ako inštalovať?

- www.stuba.sk/matlab
- Vytvoriť si konto na www.mathworks.com
- Stiahnuť
- Inštalovať
- Aktivovať
- Používať

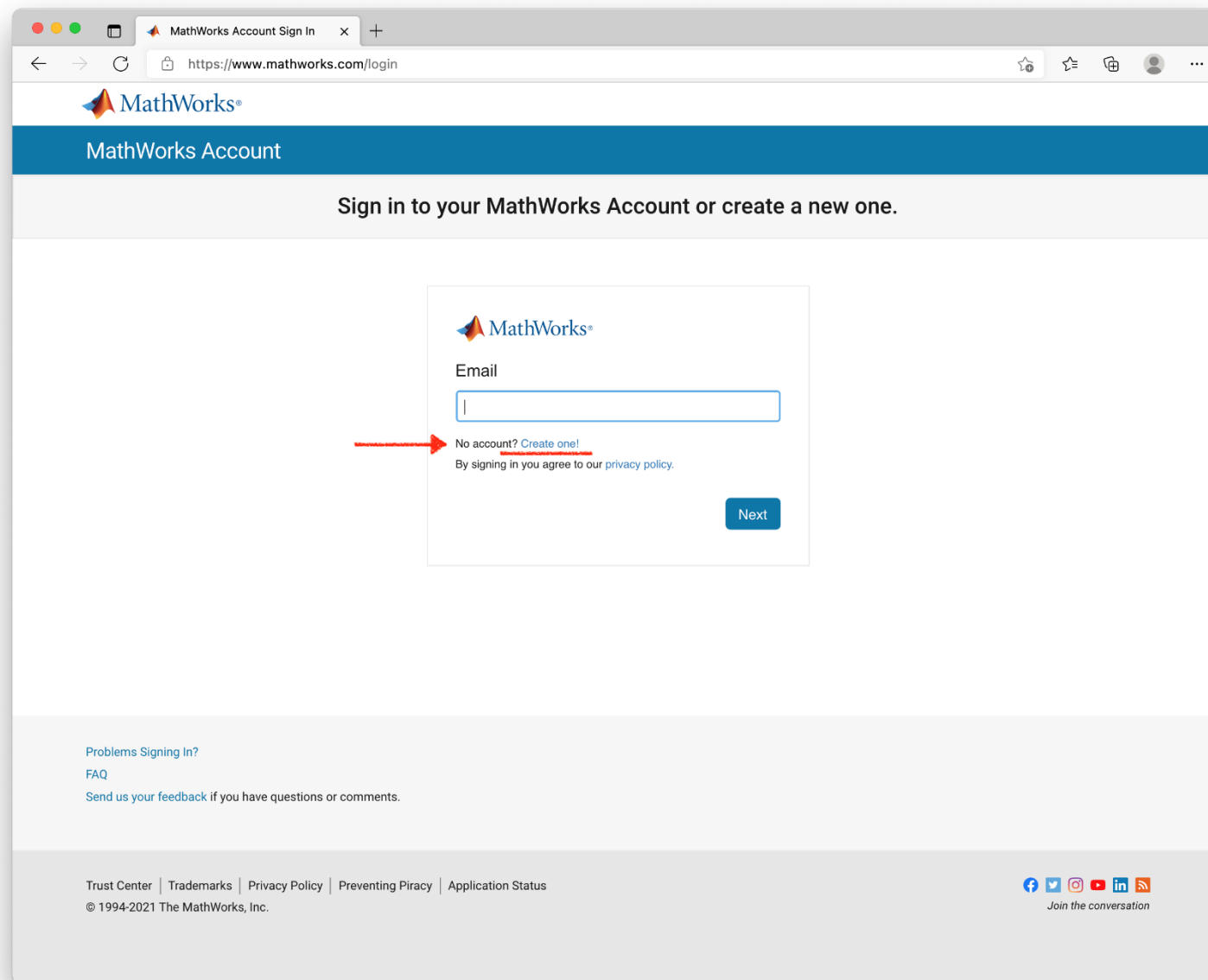
Vytvor si konto

- Login



Vytvor si konto

- Create Account



MathWorks Account Sign In

https://www.mathworks.com/login

MathWorks®

MathWorks Account

Sign in to your MathWorks Account or create a new one.

MathWorks®

Email

No account? [Create one!](#)

By signing in you agree to our [privacy policy](#).

Next

Problems Signing In?

FAQ

[Send us your feedback](#) if you have questions or comments.

Trust Center | Trademarks | Privacy Policy | Preventing Piracy | Application Status

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[in](#)
[s](#)

Join the conversation

Vytvor si konto

- Create Account

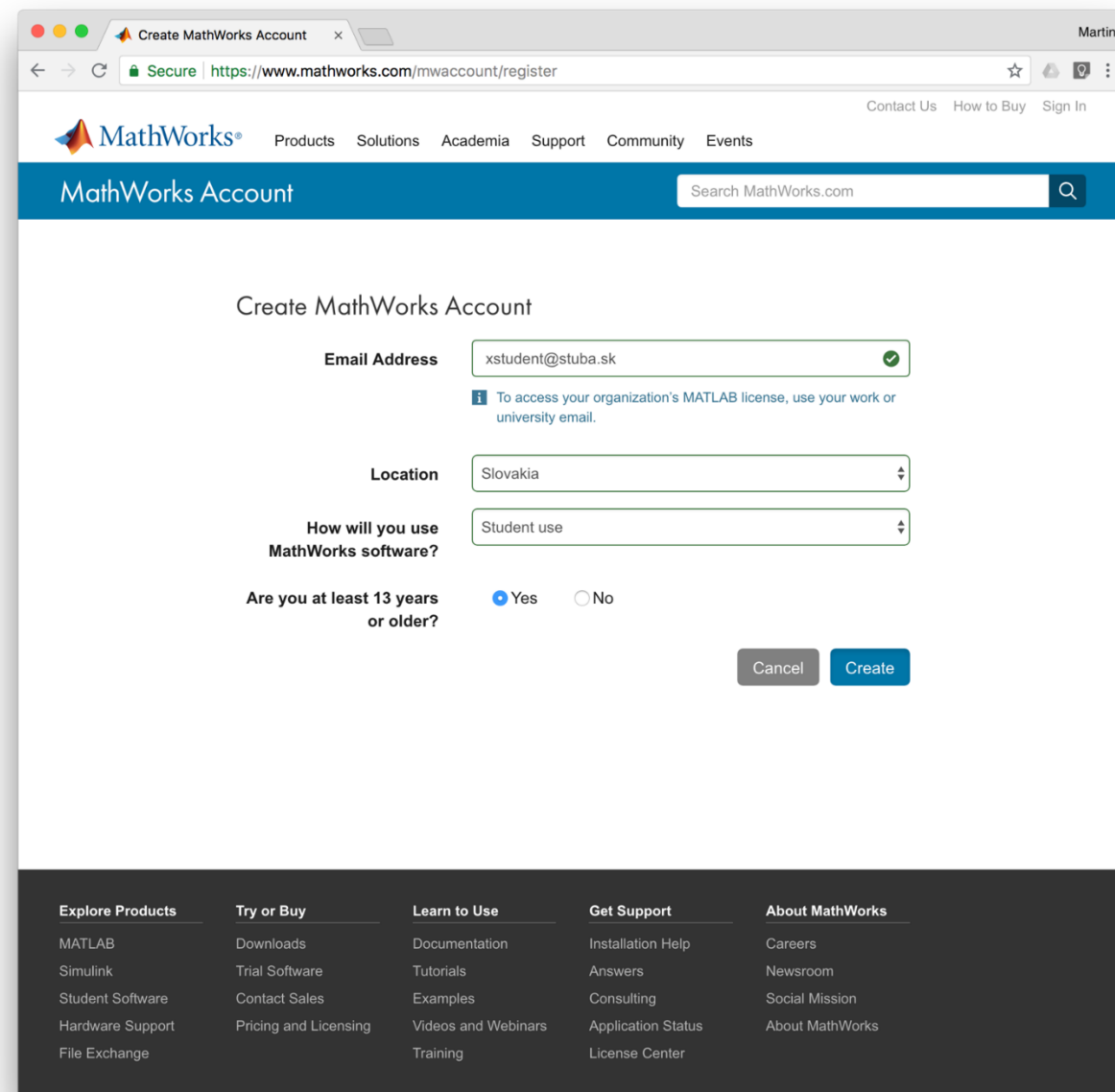
Váš e-mail stuba.sk

Slovakia

Student use

Yes

- Po vyplnení príde overovací e-mail
- Potvrdiť e-mail
- Zadať heslo
- Vyplniť ostatné informácie



The screenshot shows the 'Create MathWorks Account' page in a web browser. The browser's address bar shows the URL 'https://www.mathworks.com/mwaccount/register'. The page has a blue header with the MathWorks logo and navigation links: Products, Solutions, Academia, Support, Community, Events. Below the header is a search bar labeled 'Search MathWorks.com'. The main content area is titled 'Create MathWorks Account' and contains the following form fields:

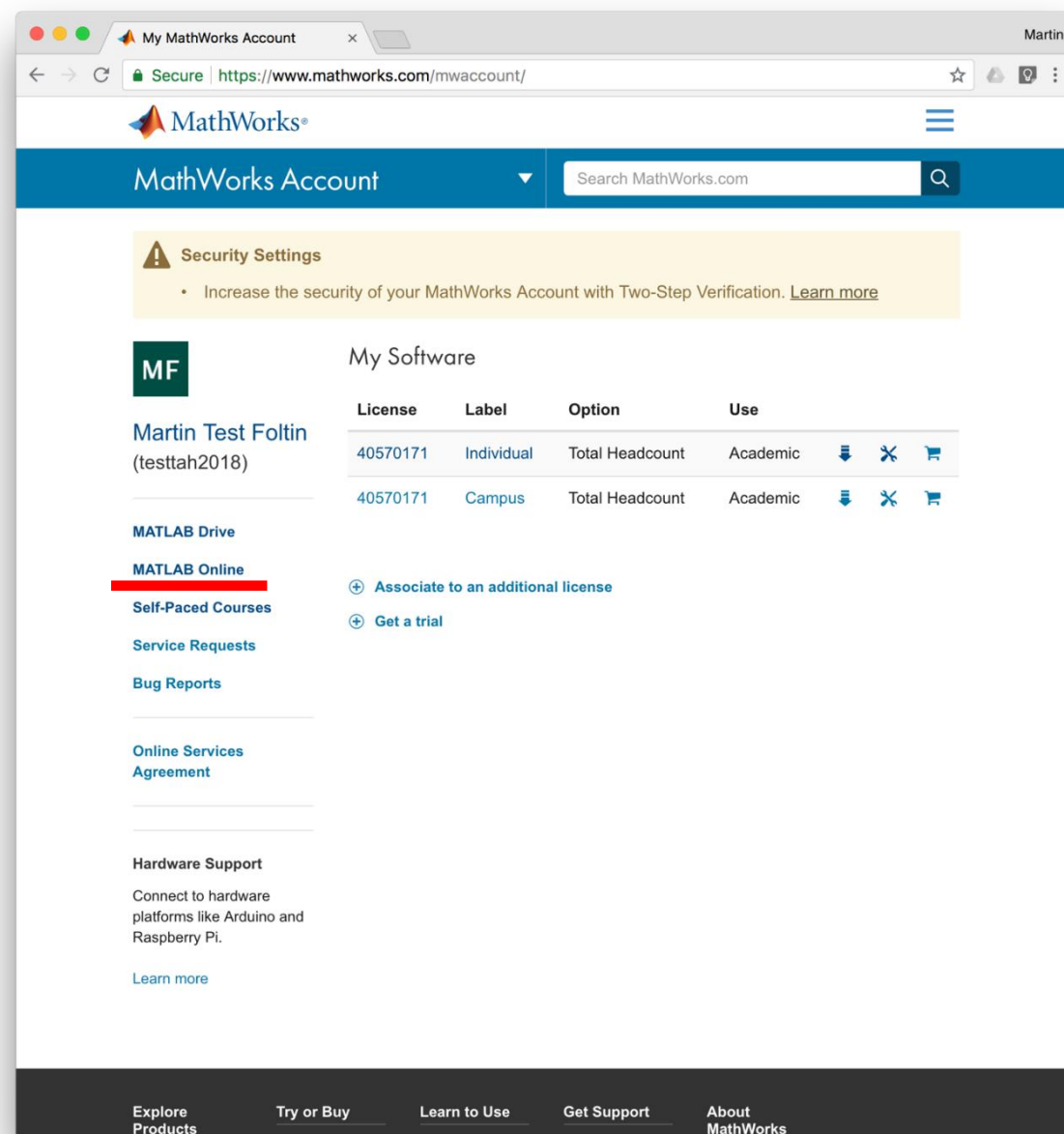
- Email Address:** A text input field containing 'xstudent@stuba.sk' with a green checkmark icon to its right. Below the field is a small blue information icon and text: 'To access your organization's MATLAB license, use your work or university email.'
- Location:** A dropdown menu with 'Slovakia' selected.
- How will you use MathWorks software?:** A dropdown menu with 'Student use' selected.
- Are you at least 13 years or older?:** Radio buttons for 'Yes' (selected) and 'No'.

At the bottom right of the form are two buttons: 'Cancel' (grey) and 'Create' (blue). The footer of the page is dark grey and contains five columns of links:

- Explore Products:** MATLAB, Simulink, Student Software, Hardware Support, File Exchange.
- Try or Buy:** Downloads, Trial Software, Contact Sales, Pricing and Licensing.
- Learn to Use:** Documentation, Tutorials, Examples, Videos and Webinars, Training.
- Get Support:** Installation Help, Answers, Consulting, Application Status, License Center.
- About MathWorks:** Careers, Newsroom, Social Mission, About MathWorks.

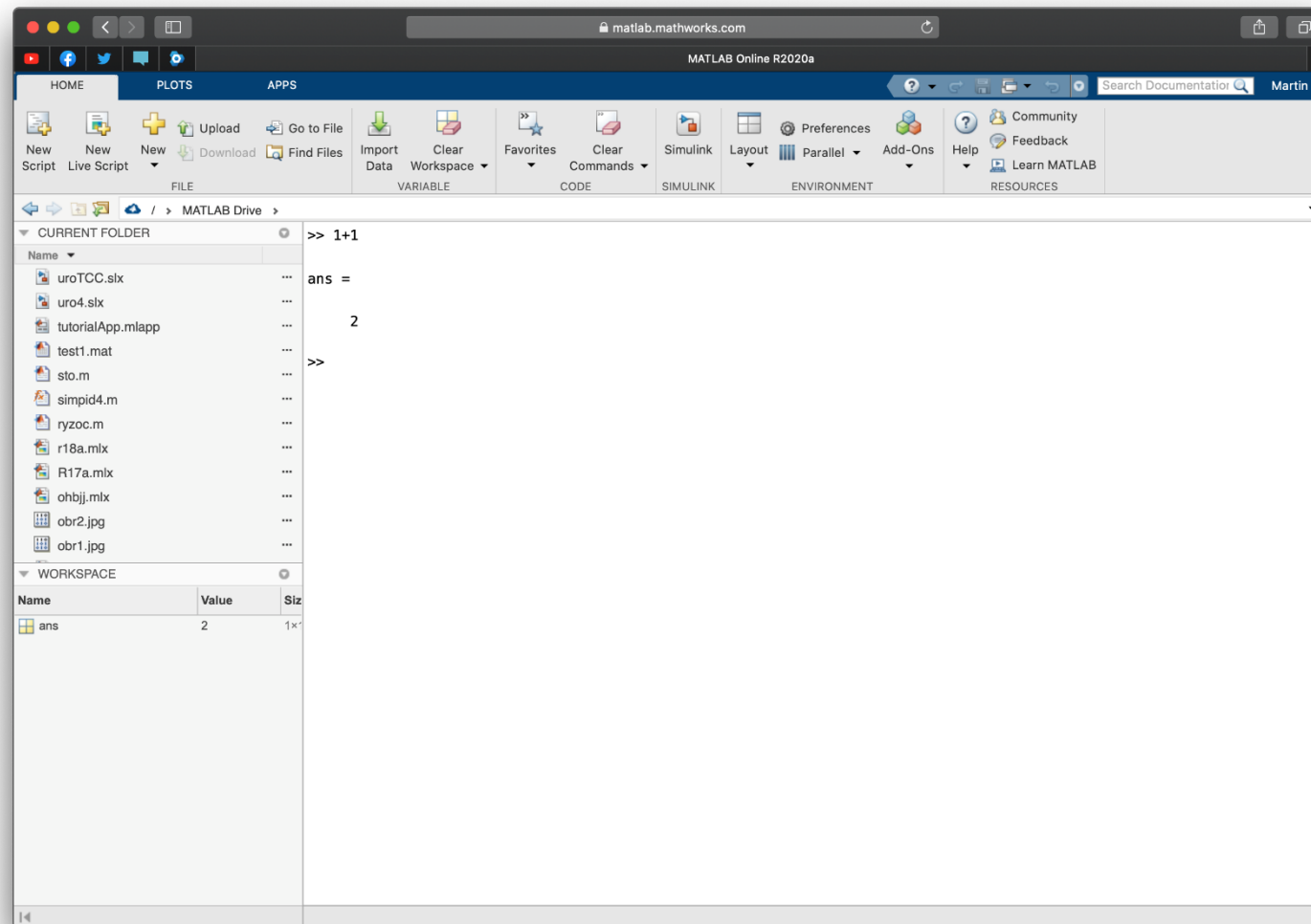
Funguje to?

- Preveríme funkčnosť
- MATLAB Online



MATLAB Online

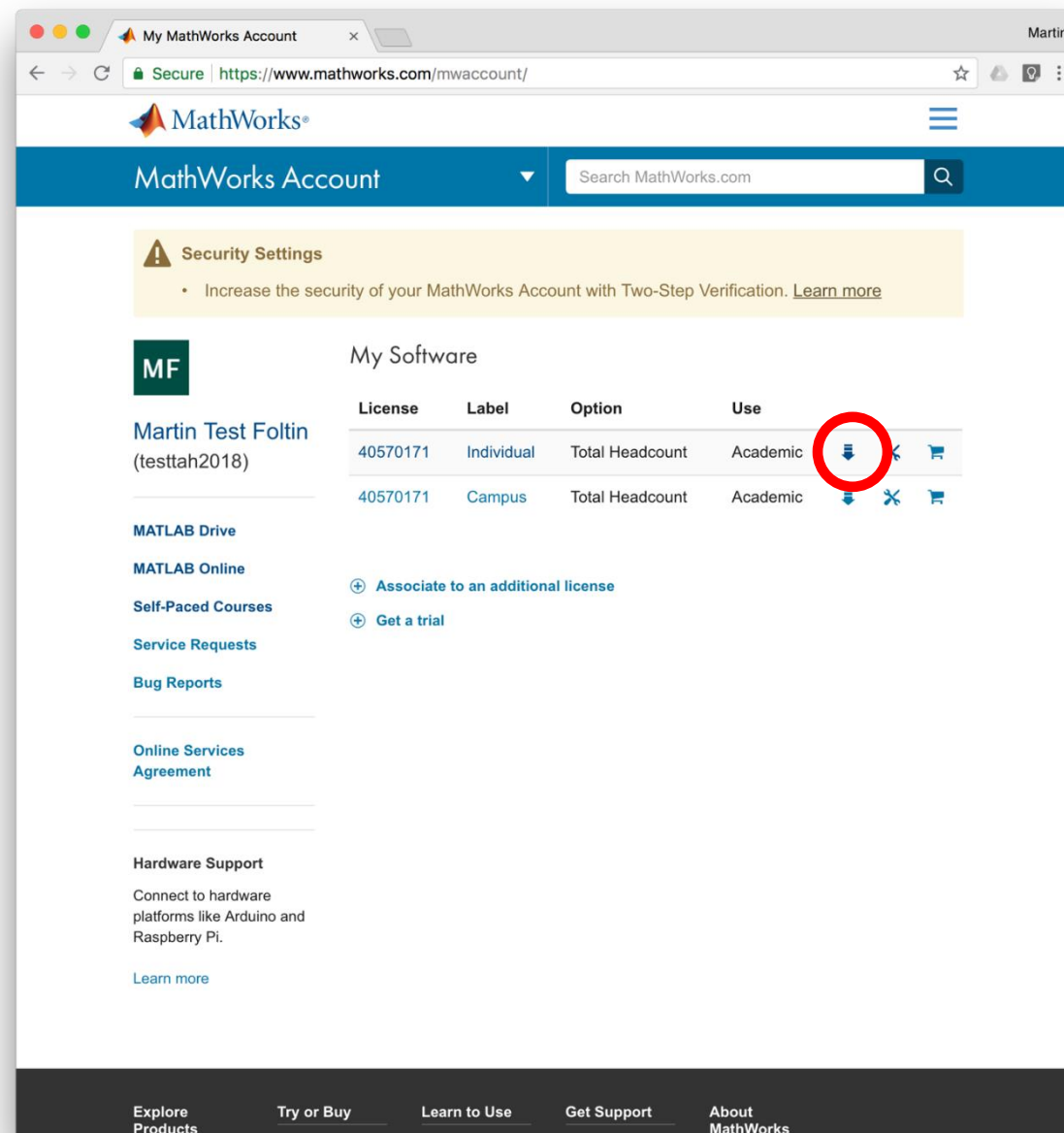
- MATLAB Online



Inštalujeme na vlastné PC

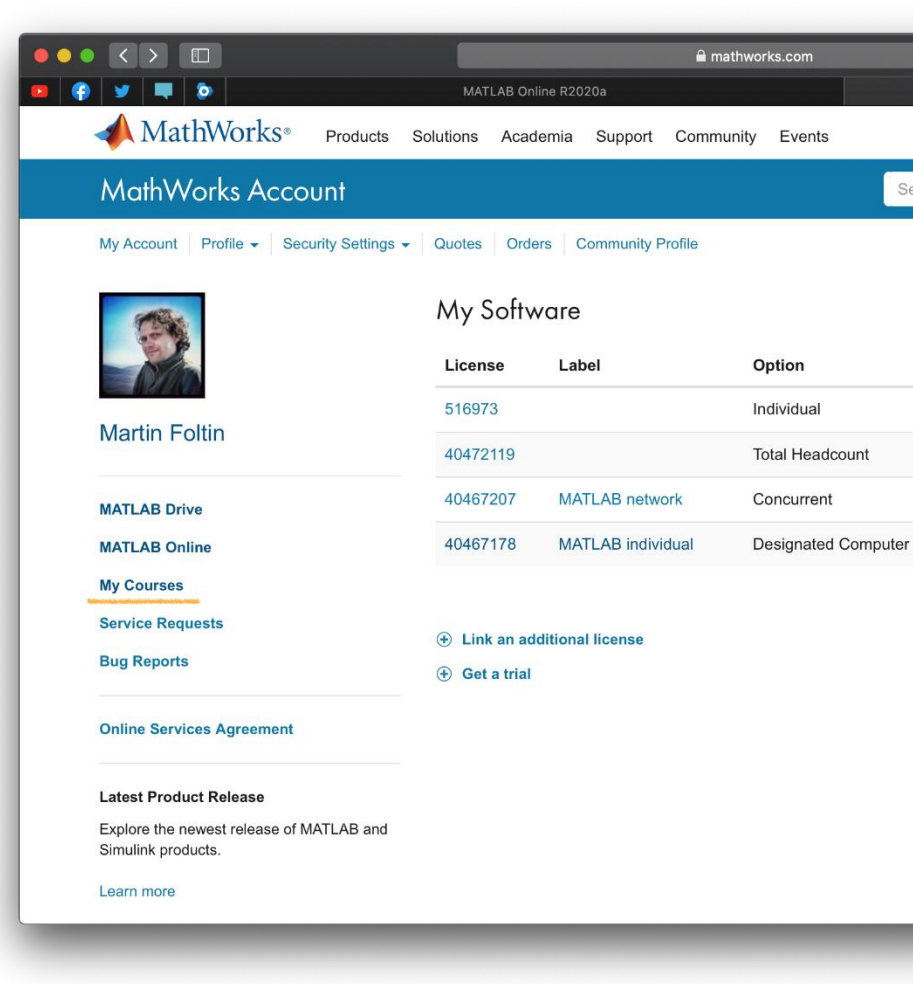
- Download
- Zvoľte verziu (R2025a)
- Zvoľte OS
 - Windows
 - macOS
 - Linux
 - Všetko 64bit

Download



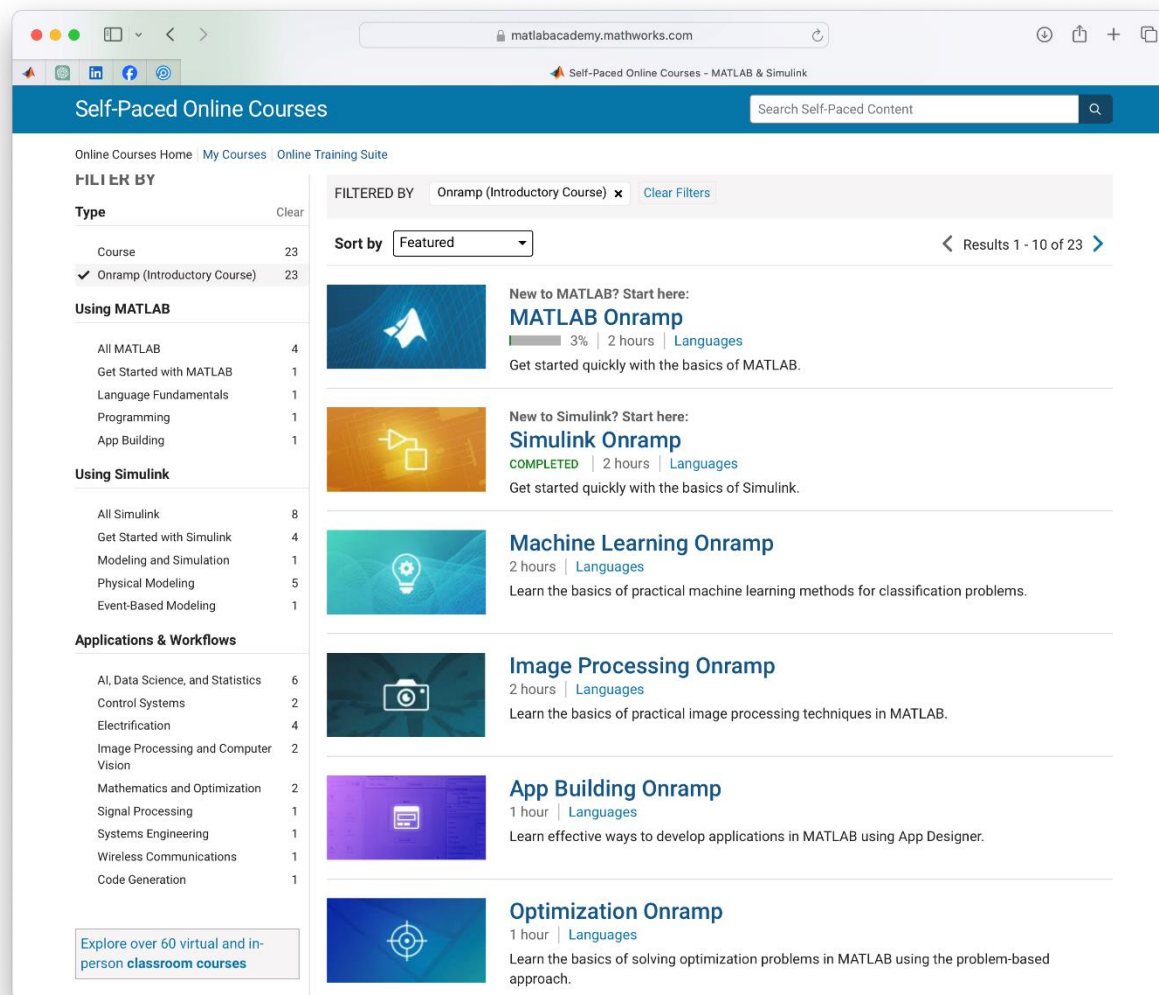
Online kurzy

- My Courses
- Začnite s [MATLAB Onramp](#)
– Za 2h máte 1. certifikát



Self-Paced Online Course

Onramp (Introductory Course)



The screenshot shows the MATLAB Academy website with the 'Self-Paced Online Courses' section. The page is filtered by 'Onramp (Introductory Course)' and shows a list of courses. The 'MATLAB Onramp' course is highlighted as 'COMPLETED' with a progress bar at 3%.

Course	Duration	Progress
MATLAB Onramp	2 hours	3% (COMPLETED)
Simulink Onramp	2 hours	0%
Machine Learning Onramp	2 hours	0%
Image Processing Onramp	2 hours	0%
App Building Onramp	1 hour	0%
Optimization Onramp	1 hour	0%

Course Certificate

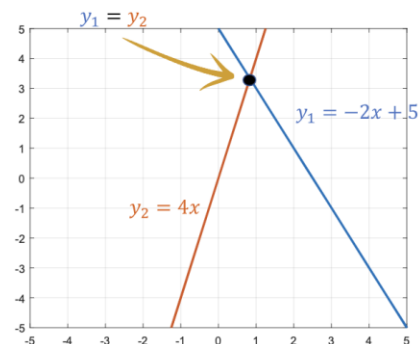


Self-Paced Online Course – Math & Optimization

#OTS_math

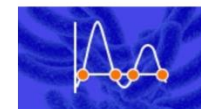
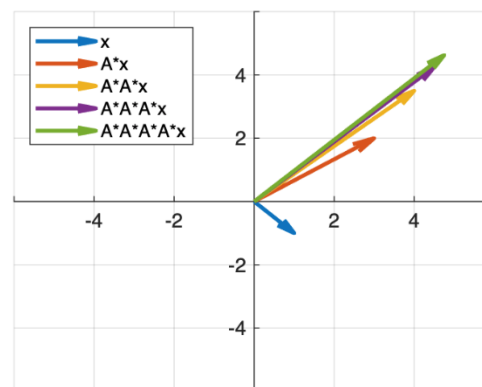
Solutions to Linear Systems

The solution of a system of linear equations refers to the x/y pair that makes both equations equal. In other words, the x/y pair that corresponds to the intersection of two lines.



$$A = \begin{bmatrix} 2.0000 & -1.0000 \\ 1.5000 & -0.5000 \end{bmatrix}$$

$$x = \begin{bmatrix} 1 \\ -1 \end{bmatrix}$$



Solving Nonlinear Equations with MATLAB

3 hours | [Languages](#)

Use root finding methods to solve nonlinear equations.



Statistics Onramp

1 hour | [Languages](#)

Get started using statistical methods for analysis in MATLAB.



Optimization Onramp

1 hour | [Languages](#)

Learn the basics of solving optimization problems in MATLAB using the problem-based approach.



Introduction to Symbolic Math with MATLAB

2 hours | [Languages](#)

Get started quickly with an introduction to symbolic math.



Introduction to Linear Algebra with MATLAB

COMPLETED | 3 hours | [Languages](#)

Use matrix methods to solve systems of linear equations and perform eigenvalue decomposition.



Solving Ordinary Differential Equations with MATLAB

4 hours | [Languages](#)

Use MATLAB ODE solvers to numerically solve ordinary differential equations.



Introduction to Finite Element Analysis with MATLAB

45% | 1 hour | [Languages](#)

Learn to solve real-world engineering problems with finite element analysis.

Self-Paced Online Course – Learning Path (PROFI)

- Online Training Suite (OTS)

- [Profi Learning Path](#)

- Core MATLAB Skills
- Build MATLAB Proficiency
- Visualization in MATLAB
- Programming in MATLAB
- Data Analysis in MATLAB
- MATLAB for the MathWorks Certified MATLAB Associate Exam
- Deep Learning Techniques in MATLAB for Image Applications
- Core Signal Processing Techniques in MATLAB
- Organize Tabular Data in MATLAB
- Handle Inconsistent and Unstructured Data Files
- Software Development in MATLAB
- MATLAB Skills for Simulink Modeling
- Machine Learning Techniques in MATLAB
- Advanced MATLAB Programming Skills
- Control System Design with MATLAB and Simulink
- Deep Learning Techniques in MATLAB for Image Applications



Software Development in MATLAB
LEARNING PATH: 3 COURSES
Write well-organized, user-friendly applications in MATLAB that will work correctly now and in the future.



MATLAB Skills for Simulink Modeling
LEARNING PATH: 5 COURSES
Learn MATLAB skills to enhance your Simulink workflows, including programming constructs, data visualization, and writing functions.



Machine Learning Techniques in MATLAB
LEARNING PATH: 4 COURSES
Build your machine learning skill set.



Advanced MATLAB Programming Skills
LEARNING PATH: 4 COURSES
Write clearer, more efficient, more robust, and more flexible MATLAB code.

- Cena OTS 590€ na osobu a rok
- s CWL **zadarmo**
- Prístup pre každého
- Certifikát
- LinkedIn
- Credly

MATLAB Campus-Wide License

- Online Training Suite (OTS)
- Learning Path
- [Digital Credentials - Credly](#)



Explore Convolutional Neural Networks

1 hour | [Languages](#)

Gain a deeper understanding of how convolutional neural networks process images.



Tune Deep Learning Training Options

1 hour | [Languages](#)

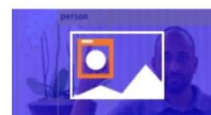
Learn about the deep network training process to make informed decisions about your training algorithm options.



Regression with Deep Learning

0.5 hours | [Languages](#)

Learn tasks.



Object Classification

1 hour

Use deep pretraining



Tables

2 hours | [Languages](#)

Import, manage, and maintain



Control System Modeling Essentials

1 hour | [Languages](#)

Create control system objects in MATLAB and Simulink and simulate their behaviors.



Linearization of Nonlinear Systems

0.5 hours | [Languages](#)

Linearize nonlinear systems at the appropriate operating points.



Control System Analysis Techniques

1 hour | [Languages](#)

Analyze control systems to explore their critical properties.



PID Control Techniques

0.5 hours | [Languages](#)

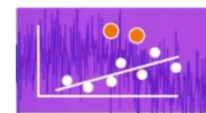
Design PID controllers for real-world systems.



Classical Controller Design Techniques

0.5 hours | [Languages](#)

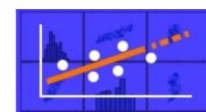
Learn controller design using classical design methods.



Clean and Prepare Data for Analysis

1.5 hours | [Languages](#)

Perform common data cleaning techniques.



Common Data Analysis Techniques

1 hour | [Languages](#)

Analyze relationships between variables and model patterns in data.



Find and Extract Subsets of Data

1 hour | [Languages](#)

Use logical indexing to filter data and count elements.



Calculations on Grouped Data

1 hour | [Languages](#)

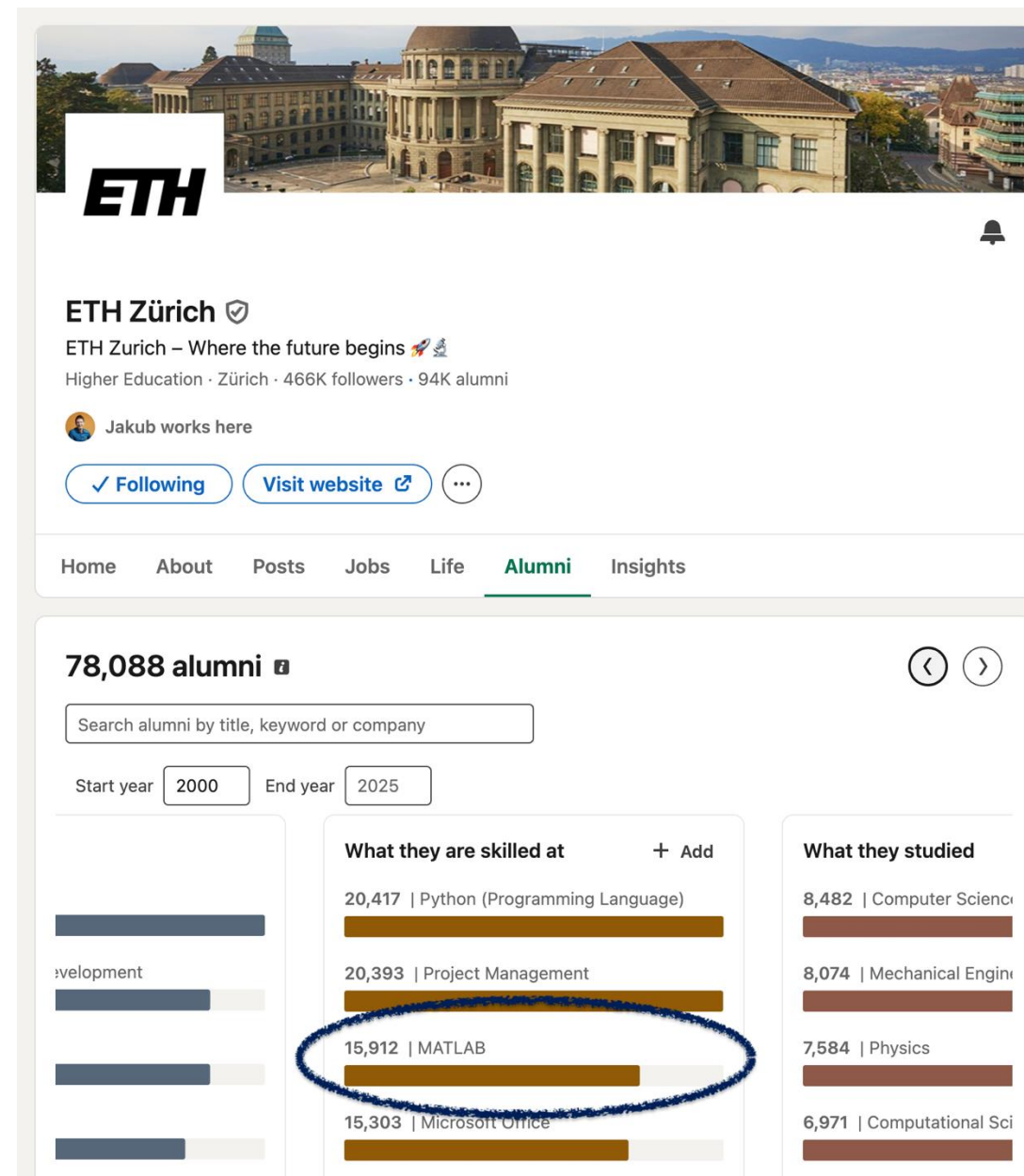
Perform calculations on groups of data.



LinkedIn

- Profi sociálna sieť
- Váš profi životopis
- Spravte si konto na LinkedIn

– <https://www.linkedin.com/>



Kam za informáciami

- Web
 - www.humusoft.sk
 - www.mathworks.com
 - www.mathworks.com/matlabcentral/answers/
- Instagram
 - <https://www.instagram.com/humusoft/>
- Discord
 - <https://discord.gg/yG6Ew9pU8k>
- GitHub - awesome-matlab-students
 - <https://github.com/mathworks/awesome-matlab-students>
- Webinare
 - Live
 - Archív
 - SK&CZ / ENG



Instagram



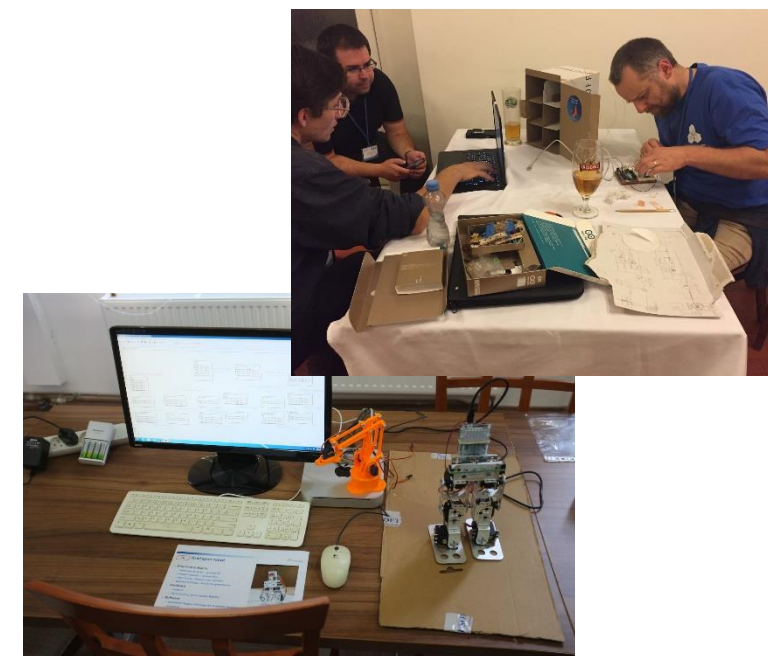
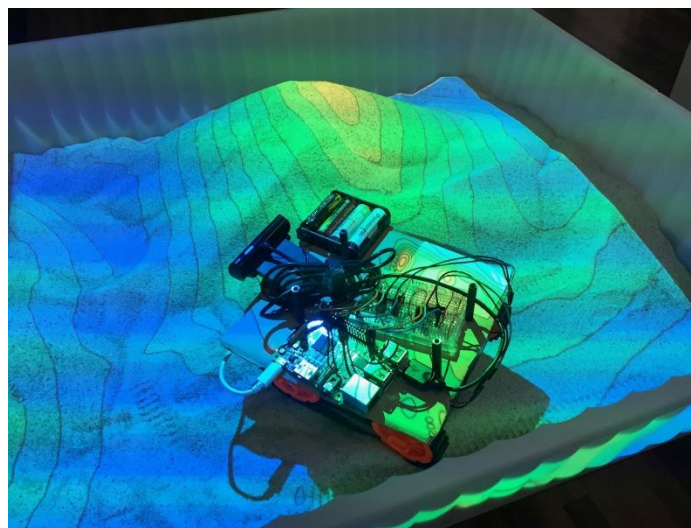
Discord



GitHub

Kam za informáciami

- Technical Computing Camp
 - Brno
 - Neformálne stretnutie
- Technical Computing Prague
 - Medzinárodná konferencia
- Semináre
- Školenia

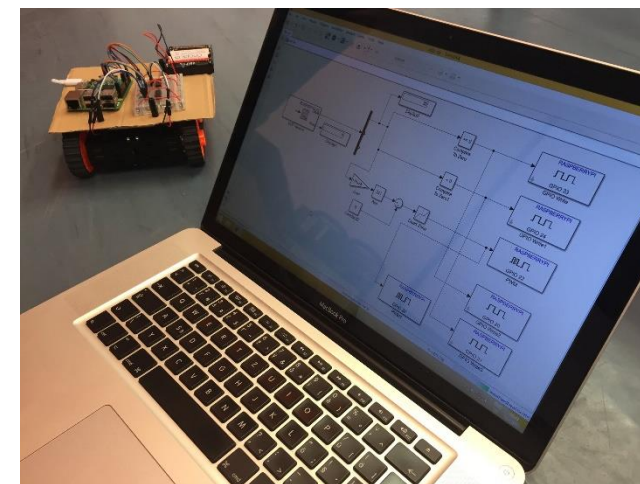




foltin@humusoft.sk
blaho@humusoft.sk
support@humusoft.sk

MATLAB Campus-Wide License

NEBOJTE SA TVORIŤ



Ďakujeme za pozornosť