

Conf.dr.ing. Roxana Rusu-Both

Nr.crt.	Titlu lucrare	Scurta descriere	Cerinte	Nivel (licenta/master)
1	Machine Learning in Autonomous Driving – in collaboration with Bosch	Data processing. Data augmentation techniques Implementation. Control system development. Testing and Validation	Data processing, Data Augumentation techniques, Machine Learning, Python, Matlab	Licenta
2	Industrial process control – in collaboration with Emerson (including available experimental stands)	Process modeling and identification. Control system design and implementation. Testing and Validation	Control engineering, DeltaV Advanced control methods (Master)	Licenta si Master
3	Control solutions for Self-balancing motorcycle	Experimental set-up design and implementation. Process modeling and identification. Control system design and implementation. Testing and Validation	Control engineering, mathematics, electronics, programming	Licenta
4	Control solutions for Spider robot (Hexapod robot)	Experimental set-up design and implementation. Process modeling and identification. Control system design and implementation. Testing and Validation	Control engineering, mathematics, electronics, programming	Licenta
5	Computer aided diagnosis system for lung cancer – in collaboration with UMF	Medical Criteria evaluation algorithm development. Diagnosis system development. Testing and Validation	Image processing, Machine Learning, Python, Matlab	Licenta si Master
6	Computer aided diagnosis system for fibrosis – in collaboration with UMF	Medical Criteria evaluation algorithm development. Diagnosis system development. Testing and Validation	Image processing, Machine Learning, Python, Matlab	Licenta si Master

7	Computer aided system for identification and classification of metastatic lymph nodes – in collaboration with UMF	Medical Criteria evaluation algorithm development. Diagnosis system development. Testing and Validation	Image processing, Machine Learning, Python, Matlab	Licenta si Master
8	EEG Signal Analysis for Disease Diagnosis	EEG data acquisition using Open BCI Daisy Headset Feature extraction. Diagnosis system development. Testing and Validation	Data acquisition Signal Processing, Machine Learning, Python, Matlab	Licenta si Master
9	EEG Signal Processing Methods for Brain Computer interface (including automotive field)	EEG data acquisition using Open BCI Daisy Headset Feature extraction. Diagnosis system development. Testing and Validation	Data acquisition Signal Processing, Machine Learning, Python, Matlab	Licenta si Master
10	EMG Signal Processing for prosthetic control	EMG data acquisition. Feature extraction. Control system design and implementation. Testing and Validation	Data acquisition Signal Processing, Machine Learning, Python, Matlab	Licenta si Master
11	Health research application that collects and processes participant health data and task results using the Samsung Health Stack	Data acquisition Data processing Feature extraction Modeling Testing and Validation	Data acquisition Signal Processing, Machine Learning, Python Matlab	Licenta si Master
12	Computed tomography - ultrasound correlation system	Experimental set-up design and implementation. Data acquisition Data processing Control system design and implementation. Testing and Validation	Electronics, Data acquisition, Signal processing Image processing Control engineering, Mathematics, Python	Licenta si Master

13	Automation solutions for Smart Homes (healthier lives) (example: air quality control)	Various topics for user centric Smart home systems. Experimental set-up design and implementation. Control system design and implementation. Testing and Validation.	Electronics, Control engineering, Programming	Licenta
14	Earthquake&Fire Monitor and Alerting System Using Stm32	Experimental set-up design and implementation. Process modeling. Control system design and implementation. Testing and Validation	Control engineering, mathematics, electronics, programming, machine learning	Licenta
15	Predictive maintenance in Industrial Machinery -In collaboration with Bosch	Data understanding, pre-processing and modeling. Anomaly detection methods	Data acquisition, Signal Processing, Machine Learning, Programming	Licenta si Master