



Teme pentru proiecte de diplomă și disertație

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Nr. crt.	Titlul temei	Scurta descriere	Cerințe / Cunoștințe necesare	Nivel (licenta/master)
1	Multi-Input-Multi-Output control of general anesthesia	<ul style="list-style-type: none">- Simulation based on an anesthesia benchmark system built in Simulink- 6 inputs and 6 outputs- Integer order MIMO control Difficulty: medium+	<ul style="list-style-type: none">- System identification- Control engineering- Good knowledge of Matlab/Simulink	Licenta
2	Multi-Input-Multi-Output fractional order control of general anesthesia	<ul style="list-style-type: none">- Simulation based on an anesthesia benchmark system built in Simulink- 6 inputs and 6 outputs- Fractional order MIMO control Difficulty: hard	<ul style="list-style-type: none">- System identification- Control engineering- Good knowledge of Matlab/Simulink	Licenta
3	Event-based Multi-Input-Multi-Output fractional order control of general anesthesia	<ul style="list-style-type: none">- Simulation based on an anesthesia benchmark system built in Simulink- 6 inputs and 6 outputs	<ul style="list-style-type: none">- System identification- Control engineering	Licenta

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		<ul style="list-style-type: none"> - Fractional order event-based MIMO control <p>Difficulty: hard+</p>	<ul style="list-style-type: none"> - Good knowledge of Matlab/Simulink 	
4	System identification of a liquid steel manufacturing plant	<ul style="list-style-type: none"> - <i>Simulation</i> - based on experimental data acquired from a continuous stirrer - the liquid steel is driven through the caster using a variable magnetic field - the developed model should connect the applied current to the EMA device and the speed of the steel particles <p>Difficulty: hard</p>	<ul style="list-style-type: none"> - System identification - Good knowledge of Matlab/Simulink 	Licenta
5	Advanced process control of a liquid steel manufacturing plant	<ul style="list-style-type: none"> - <i>Simulation</i> - based on a fractional order model of the plant - the developed controller should control the speed of the steel particles <p>Difficulty: hard</p>	<ul style="list-style-type: none"> - System identification - Control engineering - Good knowledge of Matlab/Simulink 	Licenta
6	Fractional order controller tuning using Machine Learning	<ul style="list-style-type: none"> - theoretical thesis - in depth state of the art analysis - testing and validating existing methodologies on various processes (first order, second order and time delay systems) 	<ul style="list-style-type: none"> - System identification - Good knowledge of Matlab/Simulink 	Licenta

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		Difficulty: medium+	- Desire to learn AI	
7	Fractional order controller tuning using Deep Learning	<ul style="list-style-type: none"> - theoretical thesis - in depth state of the art analysis - testing and validating existing methodologies on various processes (first order, second order and time delay systems) Difficulty: medium+	<ul style="list-style-type: none"> - System identification - Control engineering - Good knowledge of Matlab/Simulink - Desire to learn AI 	Licenta
8	Fractional order system identification using Machine Learning	<ul style="list-style-type: none"> - theoretical thesis - in depth state of the art analysis - testing and validation of existing methodologies on various processes - comparison with classical identification techniques Difficulty: hard	<ul style="list-style-type: none"> - System identification - Control engineering - Good knowledge of Matlab/Simulink - Desire to learn AI 	Licenta
9	Fractional order model predictive control of a Vertical Take-Off and Landing Platform	<ul style="list-style-type: none"> - Experimental thesis - Identification based on real-life VTOL data - Controllers should be validated on the experimental platform Difficulty: hard	<ul style="list-style-type: none"> - System identification - Control engineering - Good knowledge of Matlab/Simulink 	Licenta
10	Fractional order model predictive control of the hemodynamic system	<ul style="list-style-type: none"> - Simulation based on an anesthesia benchmark system built in Simulink 	<ul style="list-style-type: none"> - Control engineering 	Master

Nr. crt.	Titlul temei	Scurta descriere	Cerințe / Cunoștințe necesare	Nivel (licenta/ master)
		<ul style="list-style-type: none">- 2 inputs and 2 outputs- Fractional order model predictive control of the MIMO process Difficulty: hard	- Good knowledge of Matlab/Simulink	