Propozycje tematów prac magisterskich 2020/2021
Studia stacjonarne – SAAS
(w j. angielskim)

Proposals of master diploma theses 2020/2021
Full-time studies - SAAS
(in English)

LP.	TEMAT (SUBJECT)	CEL PRACY (MAIN GOAL)	ZADANIA (SCOPE OF WORK)	PROMOTOR (SUPERVISOR)
1	Orbit determination of unknown or partially known space object	Applications of stochastic models in orbit determination	1. Overview of stochastic filters 2. Theoretical background 3. Applications of stochastic filters	Magdalena Szymkowiak
2	Multi variable integral sliding mode-based controller for a quadrotor	Implementation of a controller based on sliding mode approach. Investigation of controller properties.	1. Overview of sliding-based control methodology. 2. Implementation of a quadroto model and a controller in numerical environments. 3. Simulation of a closed-loop systems.	Dariusz Pazderski
3	SDRE controller for aircraft flight dynamics	Design and application of the optimal controller for aircraft dynamics	1. Overview of SDRE control strategy. 2. Controller design and implementation. 3. Simulations of the closed-loop system	Sławomir Stępień
4	Agile Verification Approach of TCU Software	Development of software tools for automated testing.	1. Preparation and development of software tools for automated testing. 2. The use of new tool for software in the loop simulation based TCU software test. 3. Description of the tests performed and the results obtained.	Marcin Kiełczewski
5	Robust and Automatic Face analysis through semantic Face Segmentation	Development of an application for automatic face recognition	1. Studies on facial recognition and analysis. 2. Development of an application for automatic face recognition based on semantic segmentation. 3. Description of the tests performed and the results obtained.	Marcin Kiełczewski
6	Optimization of Artificial Neural Networks for collision avoidance using Evolutionary Algorithms	Applications of evolutionary algorithm for training optimization of neural network to control a car vehicles with collision avoidance	1. Studies on artificial neural networks, evolutionary algorithms and vehicle collision avoidance. 2. The use of the selected evolutionary algorithm to optimize the training of the neural network to control a car vehicles with collision avoidance. 3. Preparation of application for training the neural network and verifying car control.	Marcin Kiełczewski
7	Face - Mask Detection with use of Machine Learning Algorithms on images obtained with online camera	Preparation of software fo face - mask detection with use of machine learning algorithms on images obtained with online camera	1. Review of machine learning methods in the field of image processing: a. face detection in the image b. facial classification (e.g. emotions) 2. Analysis of existing image processing solutions: YOLO, ResNet, AlexNet, etc. 3. Development of new neural network structure for mask detection 4. Comparative analysis of the results 5. Applying the model on system using camera to detect persons without masks	Aleksandra Świetlicka