Projects at University of Applied Sciences Ravensburg-Weingarten
open for international exchange students
in Winter Semester 2016/17

Professor in Charge	Topic	Short description	Project available for students			Student needs good knowledge in the following fields	Time frame: The project can be realised within	
			from the following study directions	on Bachelor level	on Master level		2.5 months	4 - 5 months (1 sem.)
André Kaufmann *Faculty of Mechanical Engineering*	Radial Turbomachinery Design Code	Thermodynamic and Fluiddynamic design of radial turbomachinery	Physics, Mechanical Engineering		X	Strong background in thermodynamics, fluid dynamics, turbomachinery and programming required. C/C++, Matlab		X
Florian Kauf *Faculty of Mechanical Engineering*	Development of control strategies for heat pumps	Heat pumps with all elements (compressor, heat exchanger, throttle device …) are modelled. The system has to be controlled to optimize e.g. efficiency.	Mechanical Engineering, Mechatronics, Electrical Engineering	X	X	Control strategies, MATLAB/Simulink, Simulation		X
Florian Kauf *Faculty of Mechanical Engineering*	Optimization of an automotive steering system test bench	A test bench with a steering system (incl. a Mercedes Cockpit and seat) already exists. Further steering parameters should be implemented. A haptical feedback of steering torque and driving direction should be implemented.	Mechanical Engineering, Electrical Engineering, Mechatronics	X	X	Mechanical engineering, Electrical Engineering, maybe Simulation		X

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Florian Kauf *Faculty of Mechanical Engineering*	Modelling and simulation of heat exchangers	Heat transfer effects should be modelled and simulated e.g. with MATLAB/Simulink or CFD Software	Mechanical Engineering, Mechatronics	X	X	Thermodynamics, Simulation		X
Florian Kauf *Faculty of Mechanical Engineering*	Testing of components of a heat pump test bench	Doing heat transfer measurements, analysing the icing of an aluminium profile (surface of heat exchanger), doing modifications at the test rig	Mechanical Engineering, Mechatronics	X	X	Thermodynamics, experimental		X
Gerd Thieleke *Faculty of Mechanical Engineering*	Simulation of power generation of water-, solar- and windpower in isolated net of energy laboratory at HRW - dynamic behaviour of isle net in energy laboratory with matlab/simulink		Electrical, Automation, Mechanical and Environmental Engineering		x	Electrical engineering, programming language matlab/simulink	x	x
Gerd Thieleke *Faculty of Mechanical Engineering*	Installation of laser Doppler anemometry in wind tunnel	Installation of laser Doppler anemometry in wind tunnel as a new technique to measure the flow velocity in a wind tunnel. A Dantec Dynamics LDA System should be installed in the lab and measurements should be carried out in a wind tunnel.	Electrical, Automation, Mechanical and Environmental Engineering		X	fluid dynamic, programming language	X	X

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Johannes Fritsch *Faculty of Technology & Management*	Quantitative measurement of the concentration polarization in a Reverse osmosis test cell	Following a method suggested by Sutzkofer et al. in JMS the degree of concentration polarization is measured for various salt solutions and a variety of RO-Membranes.	Process engineering,	X		Physical Chemistry, Membrane technology	X	X
Lothar Berger *Faculty of Electrical Engineering and Computer Science*	Vertical Pendulum	Controller design and realization for balancing an vertical pendulum	Electrical Engineering, Mechatronics			Control Engineering, Basics of electronics		
Martin Hulin *Faculty of Electrical Engineering and Computer Science*	Projects on Object and Graph Databases	Different projects available, to be discussed	Electrical Engineering and IT, Applied Computer Science, Business Informatics	X	X	Depending on the project	X	X
Martin Hulin *Faculty of Electrical Engineering and Computer Science*	Projects on E-Learning	Different projects available, to be discussed	Electrical Engineering and IT / Applied Computer Science/ Business Informatics	X	X	Depending on the project	X	X

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Tobias Eggendorfer *Faculty of Electrical Engineering and Computer Science*	App development	Development of a mobile, multi-platform App with high security, reliability and privacy requirements:	Electrical Engineering and IT / Applied Computer Science	x	x	A strong background in programming / mobile App programming is useful as well as experience in secure programming	x	x
Tobias Eggendorfer *Faculty of Electrical Engineering and Computer Science*	Penetration testing embedded systems (several projects)		Electrical Engineering and IT / Applied Computer Science			A strong background in security is a required, Assembler knowledge is useful		
Wolfgang Ertel *Faculty of Electrical Engineering and Computer Science*	Robot Behaviour	The ROS package decision-making can be used to control the behaviour of a mobile robot with Finite State Machines and Behaviour Trees. The task is to evaluate this package for our needs.	Computer Science, Electrical Engineering	X	x	Strong knowledge in Linux, C++/Python, Finite State Machines, ROS	X	X
Wolfgang Ertel *Faculty of Electrical Engineering and Computer Science*	Robot Virtual Reality	The task is to build a possibility to inspect robot visualization in virtual reality using existing technology (Oculus Rift and RVIZ).	Computer Science, Electrical Engineering		X	Strong knowledge in Linux, C++/Python, ROS		X

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Wolfgang Ertel *Faculty of Electrical Engineering and Computer Science*	Human Movement Analysis with multiple Kinect Sensors	With the Microsoft Kinect Sensor human movement can be captured. Multiple Kinect sensors disturb themselves. The task is to find a possibility to capture a movement with multiple Kinects	Computer Science, Electrical Engineering		X	Strong knowledge in Linux, C++/Python, 3D Vision		X

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