

Projektbezeichnung/ Project description	Let's play! – AI at Schools
Projektziele/ Aims of the project	<p>Project wiki page: https://wiki.eolab.de/doku.php?id=ip:ws2021:lets_play:start</p> <p>Artificial intelligence is a prevailing technology providing chances and risks for society and environment. Capacity building in schools is crucial to enable pupils early to master the technology to avoid being mastered, to de-mystify AI, to gain critical reflection competences for assessing opportunities, suitability and limits of AI for problem solving.</p> <p>The usability of many AI toolkits is continuously improving. To utilize them less and less expert knowledge is required. This simplification can be taken further. The material we develop should be suited for children from 12 – 16 years. We have to hide the complexity of AI in the background and provide easy to use user and programming interfaces as frontends. An option we will investigate is to use the open source graphical programming languages SNAP! (similar to Scratch) and MicroBlocks to control AI enabled embedded computers.</p> <p>The training material to be created focuses on education for sustainable development and other applications oriented towards the common good. Concrete examples are biodiversity monitoring by detecting plant and animal species with robot-borne computer vision and deep learning.</p> <p>We will develop a course curriculum and tutorial material (brainware) as well as hardware and software for AI enabled small wheeled robots and tiny DIY drones for education. The open courseware will be provided and promoted appropriately.</p> <p>The ultimate goal is to design and implement course materials (brainware, hardware, software) for teaching AI in schools.</p>

<p>Projekthalt/ Content of the project</p>	<p>The development will mainly take place in the FabLab and Green FabLab of the University. The lab teams in Kamp-Lintfort will assist in making your prototypes happen. Full access to the FabLabs and their machinery will be granted.</p> <p>Based on skills and knowledge in the student team the project could comprise:</p> <ul style="list-style-type: none"> • Curriculum development for AI at schools based on SNAP! Programming language • Development of open educational resources (OER): presentations, video tutorials, software repositories • Set up of an online learning platform (e.g. open EdX, Moodle, etc.) • Corporate design creation for course promotion • Assembling of an AI robot platform which is our own open source Jetbot design using NVIDIA Jetson • Development of a tiny open hardware drone with WIFI webcam streaming to NVIDIA Jetson for computer vision and AI • Development of software glue components to couple an object detection server process on Jetson and SNAP! (as frontend)
<p>Allgemeine Anforderungen/ General Requirements</p>	<p>Great enthusiasm for tinkering, developing training material and working with children is a prerequisite for participation in the project.</p> <p>Functional demonstrators, documentation and training material are mandatory project deliverables!</p> <p>Therefore, we are looking for students who are seriously dedicated.</p> <p>We expect great commitment and willingness to work according to a 10 CP workload (2 x typical lecture/exercise course)</p> <p>In return we offer an exciting project dealing with state of the art technology which matters.</p>
<p>Projektsprache/ Project language</p>	<p><input type="checkbox"/> Deutsch <input checked="" type="checkbox"/> English</p> <p><i>Bitte eine Sprache angeben. Änderung sind nachträglich möglich, allerdings dann nur mit Einverständnis aller Teilnehmenden.</i></p>

Interdisciplinary Projects / Interdisziplinäre Projekte (5. Semester)
WS 2021/22

	Studiengang/Course	Max. Anzahl Studierender/ max. number of students	Spezielle Zulassungsbedingungen*/ Specific Requirements <i>* Angaben nicht zwingend notwendig</i>
	Bachelor		
	Verwaltungsinformatik - E-Government <input checked="" type="checkbox"/>		
	Environment and Energy <input checked="" type="checkbox"/>		
	Communication and Information Engineering <input checked="" type="checkbox"/>		
	Information and Communication Design <input checked="" type="checkbox"/>		
	International Business Administration <input checked="" type="checkbox"/>		
	Medieninformatik <input checked="" type="checkbox"/>		
	Mobility and Logistics <input checked="" type="checkbox"/>		
	Psychologie (A&O) <input checked="" type="checkbox"/>		
	Master		
	Design and Interaction <input checked="" type="checkbox"/>		
International Management and Psychology <input checked="" type="checkbox"/>			
Information Engineering and Computer Science <input checked="" type="checkbox"/>			
Usability Engineering <input checked="" type="checkbox"/>			
Max. Anzahl Teilnehmende insgesamt/ Number of participants	Overall 12 students <i>Die Summe der maximalen Anzahl der Studierenden in den jeweiligen Studiengängen soll mit der maximalen Anzahl der Teilnehmenden insgesamt übereinstimmen.</i>		
Projektleitung/ Project supervisor	Prof. Dr.-Ing. Rolf Becker, Prof. Dr. Frank Zimmer, Harley Lara, and FabLab / Green FabLab employees		