



## Winning the KUKA Innovation Award 2015

Next year's KUKA Innovation Award<sup>1</sup> rewards outstanding **robotic innovations** with a prize money of **20,000 EUR**. The participants must prove their concept on the **KUKA LWR iiwa**, which is sponsored by KUKA. We will participate by realizing our proposal of robotic aided use-wear analysis in archeology. The idea is the following:

In **experimental archeology** stone tools are used for hypothetical tasks under controlled conditions (e.g. scraping off remainders of flesh and tendon from animal hide with hafted flint stone). Our approach is to **substitute the human subject by the KUKA LWR iiwa**, to perform the task and show that by using robotic technology we can better control the critical parameters of the experiment.

We are looking for **two motivated students** as part of our team. In addition to the design of experimental set-up and interfaces between end-effector and stone tool the focus of the project lies on the implementation of force control. The torque sensors in all seven joints of the LWR allow for highly dynamic force and impedance control of the end-effector. The software already exists at ADRL, therefore the main work package consists of adjusting the kinematic and inertial input data and the APIs to the robot.



The project **results have to be presented in February 2015** to the KUKA jury. In case of successful participation the solution will be showcased at the KUKA headquarters in Augsburg and at the leading international trade show "Hannover Fair" in April 2015.

### Your background:

- master Student in mechanical, electrical or computer science
- solid control systems background.
- good programming skills in C++
- open to interdisciplinary work

### Our offer:

- possibility to work on a state of the art robotic manipulator
- good chances to win the KUKA Innovation Award
- possibility to count this activity for your studies (MA, SA)

Are you interested? **Contact us as soon as possible** – please include CV and transcript of records.

**Contact:** Johannes Pflöging – [pflojinj@student.ethz.ch](mailto:pflojinj@student.ethz.ch), Jonas Buchli – [buchlij@ethz.ch](mailto:buchlij@ethz.ch)

<sup>1</sup> <http://www.kuka-labs.com/en/network/innovationaward>