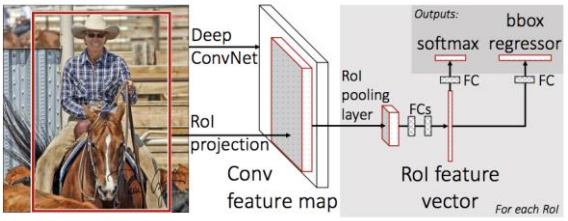
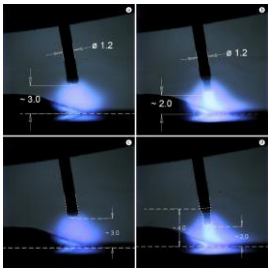
Bachelor-, Project-, Staats- und Masterthesis

Topic: Implementation and testing of a Fast R-CNN for advanced usage of machine learning for industry 4.0-ready welding process quality control





Betreuer:

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Art der Arbeit:

Bachelorthesis	x	Experimantal	x
Projectthesis		Construction	x
Other		Theoretical	x
Masterthesis	x	Literature	

Start: Now

Specialist field:
Mechanical engineering / CES / Informatik

Previous knowledge: Basics of machine learning

Aufgabenstellung:
Welding processes are high dynamic manufacturing processes. The quality management can either be done online, looking at the voltage / current curves or after welding by conventional testing methods of the weld seam. At the ISF new approaches of process control are investigated, based on vision sensing systems. Therefore machine learning can be a helpful tool to process the generated data.
The aim of your work is to implement an feature detecting algorithm for image based welding data. Therefor a Fast Region-based Convolutional Network (Fast R-CNN) shall be implemented and trained, using Tensorflow. A proper data feedstock is available. Your job would be putting together and preparing the dataset as well as training and testing the Algorithm.
We offer you a flexible design of your workflow, a nice working atmosphere and the possibility to develop competences in the field of welding, additive manufacturing and machine learning.
If you are interested, feel free to visit us at any time or call us.

Please note, that we cannot offer you a hiwi job for the thesis.