Master thesis: Machine Learning in Automatic Manufacturing

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Machine learning in automatic manufacturing is a relatively new but vibrant field. Our current focus at Bosch Corporate Research Center in Renningen is Joining Technologies, which refer to a group of fully automated processes, widely applied at Bosch and many renowned automobile manufacturers. Fully automated joining processes are time- and energy-efficient and cause little pollution. The high degree of automation enables collection of a huge volume of data. There is great potential for the application of data mining/machine learning methods in joining technologies.

Your contribution

Your will be part of a team of engineers, mathematicians, material scientists and data scientists. You will participate in and shape together our project in development and application of Data Mining/Machine Learning approaches in Joining Technologies, through the whole process of data collection, analysis, evaluation and interpretation. The project is problem-oriented, but you have great freedom to explore classic machine learning or deep learning methods.

- Literature research on the state of the art and comparison of relevant methods
- Representing and solving selected challenges in intelligent manufacturing using data mining/machine learning methods
- Preparation, understanding, and interpretation of the data
- Design and implementation of selected data mining/machine learning methods suitable for joining processes
- Optionally participation in writing of a scientific paper

What distinguishes you

- Enrolled Master student of engineering, computer science, nature science or a similar field with above average grades
- Strong knowledge and experience in programming with Python, MATLAB, or R
- Experience in data mining/machine learning
- Diligence and independence in learning and working
- Good command of English or German

Documents required

- Curriculum Vitae
- Cover letter
- Transcript of records of the Master study
- Examination regulations
- Certificate of registration
- Residence permit and work permit for foreign students

Additional information

Start: from now on or according to agreement
Contact person: Baifan Zhou (CR/APJ)

Duration: 6 months
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