

# Scientific Research and Writing (193.052)

## Skills in Cyber-Physical Production Systems – Steps of a Systematic Literature Review

Stefan Biffli, Kristof Meixner

- Industry 4.0 employs *Cyber-Physical Production Systems (CPPS)* to produce highly-customizable goods
- Such *Products* are manufactured by *Processes* that utilize *Resources*
  - *Cars* require doors that are *screwed on* by *screwing robots*
- Model-based *Skills* for CPPS can match production processes to suitable production resources
- Skill modeling is an upcoming research topic in Industry 4.0
- There is a variety of definitions for the skill concept

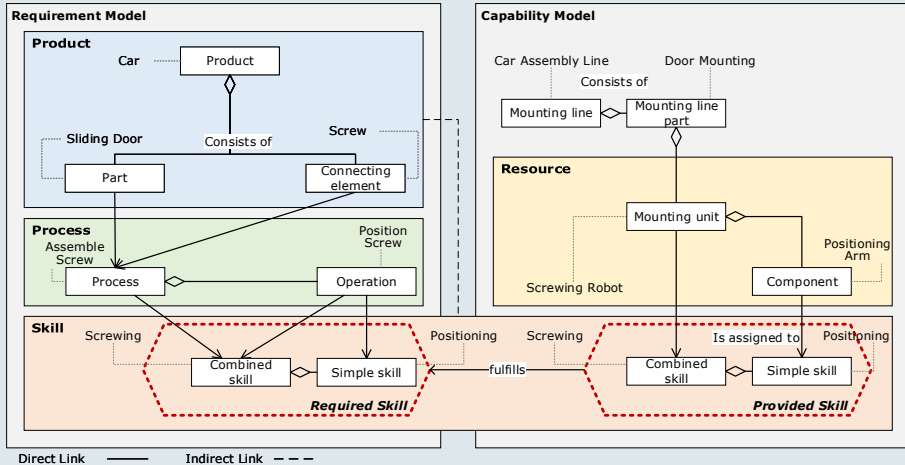


Figure 1: Required and Provided Skills as link between CPPS processes and resources

We will have ...

- An interesting Scientific Research and Writing seminar on *Skills of Processes and Production Resources in Cyber-Physical Production Systems for Industry 4.0*
  - The practical seminar part will be highly relevant for your future bachelor/master thesis
  - We also offer thesis topics and practica after the seminar
- Intensive discussion with a dedicated seminar partner and in the group
- Small seminar group

You will learn how to ...

- ...conduct a systematic literature review with tool support (100 possible points for a grade)
  - ...search for relevant scientific (*CPPS Skills*) papers (25 points)
    - Overview papers as intro
    - Definition of search strings for automated search of scientific papers
    - Structured search of in-depth papers
  - ...read and analyze the a set of papers (25 points)
    - In-depth analysis of relevant scientific papers
    - Discussion of skills concepts in the scientific community.
  - ...write a report on the papers (30 points)
  - Present your work on *CPPS Skills* (20 points)

Hence, we search for skilled and interested students

- If you are interested ...
  1. Take a look at the seminar page – QR code or `qse.ifs.tuwien.ac.at/wissarbeiten/`
  2. Fill out the questionnaire linked on the seminar page
  3. We will contact the registered students after *all* questionnaires are completed
- Mandatory information meeting on October Wed, 14th, 15:00h, via Zoom
  1. `tuwien.zoom.us/j/99890117448`



Figure 2: Link to seminar page

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