



Open PhD Position `Transfer Learning with Softcomputing Models`

The Department of Knowledge-Based Mathematical Systems (FLLL) at the Johannes Kepler University Linz and the Software Competence Center Hagenberg (SCCH) are offering a **PhD position in the field of transfer learning with soft computing models for regression problems**. The basic task is to **transfer knowledge from one or a number of original source tasks to one or more similar target tasks** with little training data available for each, while achieving robust and consistent models. Thereby, the following related variants for transfer and representation learning should be considered throughout the PhD:

- **Direct (classical) model transfer** from one concrete source task to a target task.
- **Multi-task learning** as a variant of inductive transfer learning.
- **Learning common transferable representations** for a set of tasks.

While the former tries to adopt already available models to a concrete new task, the latter assumes that all tasks are available at once and are thus learned simultaneously. Both variants assume that **labeled data is available** for all tasks and in both variants it is a **challenge to transfer model parameters, model structures and/or input feature representations**. Model architectures relevant for this work will be **specific types of neural networks** for deep structured learning, **kernel methods**, and **fuzzy systems** with universal approximation and interpretation capabilities.

The developed approaches **should be tuned and evaluated on real-world data from industrial projects**. The position will be located in Hagenberg at the Department of Knowledge-Based Mathematical Systems, with further mentoring by Software Competence Center Hagenberg.

Profile/Personal Qualification of the candidate: Applicants should preferably have a **completed master in Mathematics/Informatics/Mechatronics/Statistics** or related studies, 300 ECTS points received during her/his study (bachelor and master) and have prior experience in soft computing and/or machine learning techniques. We expect willingness for preparing publications in international journals and conferences, and clearly suppose an interest in transfer learning and adaptive systems. Working permission for the EU is requested.

JKU wishes to increase the proportion of female faculty and, for this reason, especially welcomes applications from women. If applicants are equally qualified, women will be given preference for this assignment. The university welcomes applications from qualified applicants with physical disabilities. These applications will be given special consideration.

Duration of contract: 3 to 4 years, Deadline of App.: Dec 04, 2015, **Start Date:** Jan 01, 2016

Approx. Salary (Gross): at least 36.621.- Euro per Year, 40 hours a week

Contact: Applicants should send a CV, degree certificates and references to own publications together with a short letter of motivation to

Dr. Edwin Lughofer (FLLL), email: edwin.lughofer@jku.at

Dr. Thomas Natschläger (SCCH), email: thomas.natschlaeger@scch.at