

Lehrstuhl für Wirtschaftsinformatik insb. Energieeffiziente Systeme, Prof. Dr. Thorsten Staake

## Module: EESYS-P-BIRES-M – WS 2017/18 (Mon/Tue, 12 – 14 h)

### Topic: “Scalable data analytics solutions for R”

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#### SUMMARY

- In this **Information Systems (Wirtschaftsinformatik) project**, students will test and evaluate **scalable (cloud) platforms for R** (including cloud services, R server, ...) for different usage scenarios
- Students learn to work with the modern data science / data analytics environment R, work with big data and practice agile software development and project management using “Scrum”
- An introduction to the R programming environment will be given in the beginning of the course.

#### BACKGROUND

Energy utilities and other industries are faced with massive amount of data from smart meters and internet of things devices that measure and transmit an infinite amount of data. Besides that, huge amounts of free and open data sources are available to companies. The availability of data itself will not of anymore a competitive advantage, but the ability to efficiently process the data and generate insights and knowledge from it.

R is one of the major data science and analytics environments being able to handle big data (characterized by volume, variety, veracity and velocity) and apply all kind of business analytics to the data (descriptive, diagnostic, predictive and prescriptive analytics).

#### TASK

In this project, students will evaluate different cloud-platforms and environments to enable scalable R computation in groups of 2-4 students.

In the **first phase** of the project, students will identify possible cloud service provider and scalable R solutions (including R server variants) for evaluation, identify a number of use cases (e.g., processing of time-series data, machine learning, visualization and dashboard design, education and training), and reasonable evaluation criteria for the different solutions.

During the **second phase**, each group will evaluate one of the identified scalable R solution among all use cases.

**Finally**, students will summarize their findings in a concise management summary (project report).

#### TARGET GROUP

Max. 15 Master Students from all WIAI programs (WI, IISM, AI, CitH, ...). Bachelor students can attend the module as part of their “Profilbildungsstudium” B1 or B2.

#### NECESSARY SKILLS

Some background in R or programming in general would be a plus, but is not required. An introduction to the R environment will be given at the beginning of the event. The agile method “Scrum” is used for project management. The students also learn the work in agile project teams.

## COURSE SCHEDULE AND ORGANIZATION

**Effort:** 6 ECTS

**Language:** German or English

**Location:** WE5/03.004

**Time:** Monday/Tuesday, 12:15- 13:45. Most of the time, students will be able to schedule the work themselves. Attendance in the sprint meetings and the final presentation is necessary.

Preliminary course schedule:

Mon	09.04.2018	Kick-off meeting and team forming (students can join the groups <b>until Friday, 13.04.18</b> )
Tue	17.04.2018	Short R Introduction
Tue	24.04.2018	1 <sup>st</sup> sprint meeting (planning)
Tue	08.05.2018	2 <sup>nd</sup> sprint meeting (planning and review)
Tue	29.05.2018	3 <sup>rd</sup> sprint meeting (planning and review)
Tue	19.07.2018	4 <sup>th</sup> sprint meeting (planning and review)
Tue	03.07.2018	5 <sup>th</sup> sprint meeting (review)
Tue	10.07.2018	Final presentation

**Teams:** you can group up in teams of 2-4 students.

## CONTACT



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We are looking forward to your participation!

The EESys-Team