TECHNISCHE UNIVERSITÄT WIEN
Vienna | Austria

Christian Doppler Forschungsgesellschaft

Scientific Work - Kick off

Big Data in Systems& Software Engineering

Stefan Biffl, Dietmar Winkler, Kristof Meixner

Welcome Address

- Dietmar Winkler & Kristof Meixner
  - Corresponding co-supervisors for Seminar Scientific Work
  - E-Mail
    - dietmar.winkler@tuwien.ac.at
    - kristof.meixner@tuwien.ac.at
- Attendants
  - Who is present?
  - Who filled out the questionnaire?

Big Data Cloud

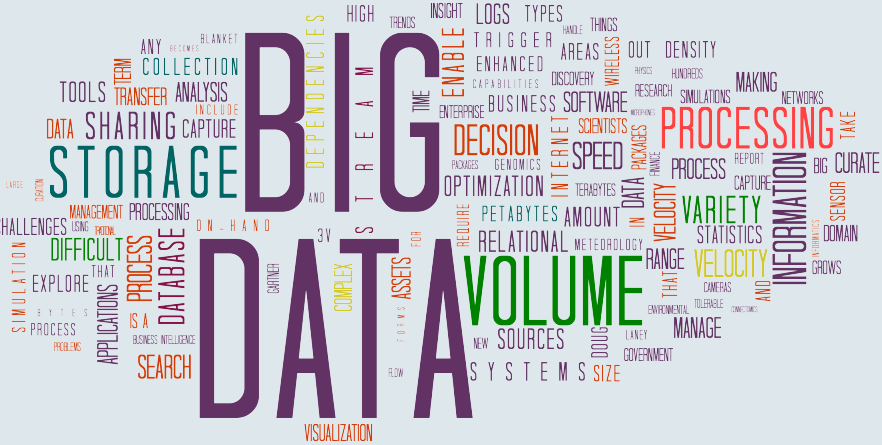


Figure 1: Big Data Topics, By Camelia.boban, CC BY-SA 3.0

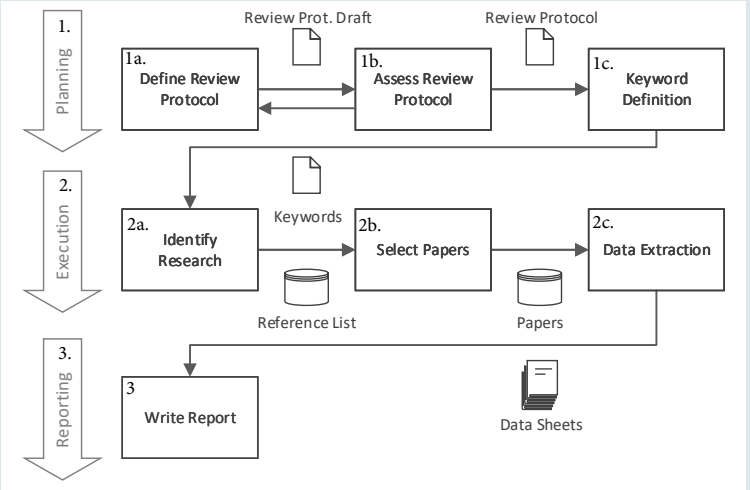
Big Data Topics

- Big Data allows *extraction* and *systematic analysis* of complex datasets
  - Data Analytics – derivation of novel facts or events
  - Decision Making – selection support for plans or solutions
  - Relationship Learning – recognition of relations from hidden characteristics
- Recently growing interest in Big Data research

Big Data in Systems & Software Engineering

- Goal of the study
  - Identifying novel approaches of Big Data in SSE
  - Identifying evidence for benefits of Big Data in SSE
  - Identifying issues that require Big Data in SSE
- Study methodology
  - Adapted Systematic Literature Study
  - Contributions will flow into a common seminar work
- Skills that you learn
  - Knowledge about Big Data Technologies
  - How to conduct an Adapted Systematic Literature Study

SLR Approach



Step 1 – Study Planning

- Define Review Protocol
  - Define search strategy, selection criteria and data extraction
- Assess Review Protocol
  - Researchers check feasibility
- Keyword selection
  - Each students reads the basic papers
  - Students in pairs define keywords

Step 2 – Study Planning

- Identify Research
  - Each student searches the Scopus data catalog
  - Collect papers based on title, abstract and keywords
- Select Research
  - Papers are checked for relevance
  - Papers are cross-checked by other students
- Data Extraction
  - Each students get the data collection sheets
  - Each students gets three (3) papers
  - Student reads the paper and collects the data

Step 3 – Write Report

- Write Report
  - Write up findings from data sheets
    - definitions, methods, models, examples
  - Needs interpretation of the data
- *Present Work*
  - Lessons learned in seminar
  - Aspects of Big Data

Agenda

- 29.10. (10-11h [A,D], 11-12h [B,C]) – Read basic literature & define keywords
- 13.11. – Identify research
- End Nov./Begin Dec. – Select papers
- 11.12. – Extract data
- 22.01. – Write report

Groups

- Groups
  - A – D
- Exchange contact info
  - Define corresponding member
  - Define a group speaker

Next Steps

Until Wed, 29.10.19

- Read basic literature (individual)
  - Big Data
    - Madhavji *et al.*, *Big Picture of Big Data Software Engineering: With Example Research Challenges*. (BIGDSE'15)
    - Michael and Miller, *Big Data: New Opportunities and New Challenges [Guest editors' introduction]* (Computer'13)
    - Casado and Younas, *Emerging trends and technologies in big data processing*. (Concurrency Computat.: Pract. Exper.'15)
  - Systematic Literature Review
    - Kitchenham *et al.*, *Systematic literature reviews in software engineering – A systematic literature review*. (IST'09)

Next Steps – cont'd

Until Wed, 29.10.19

- Define keywords/search string (pairwise)
  - Define keywords
  - Define search string

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