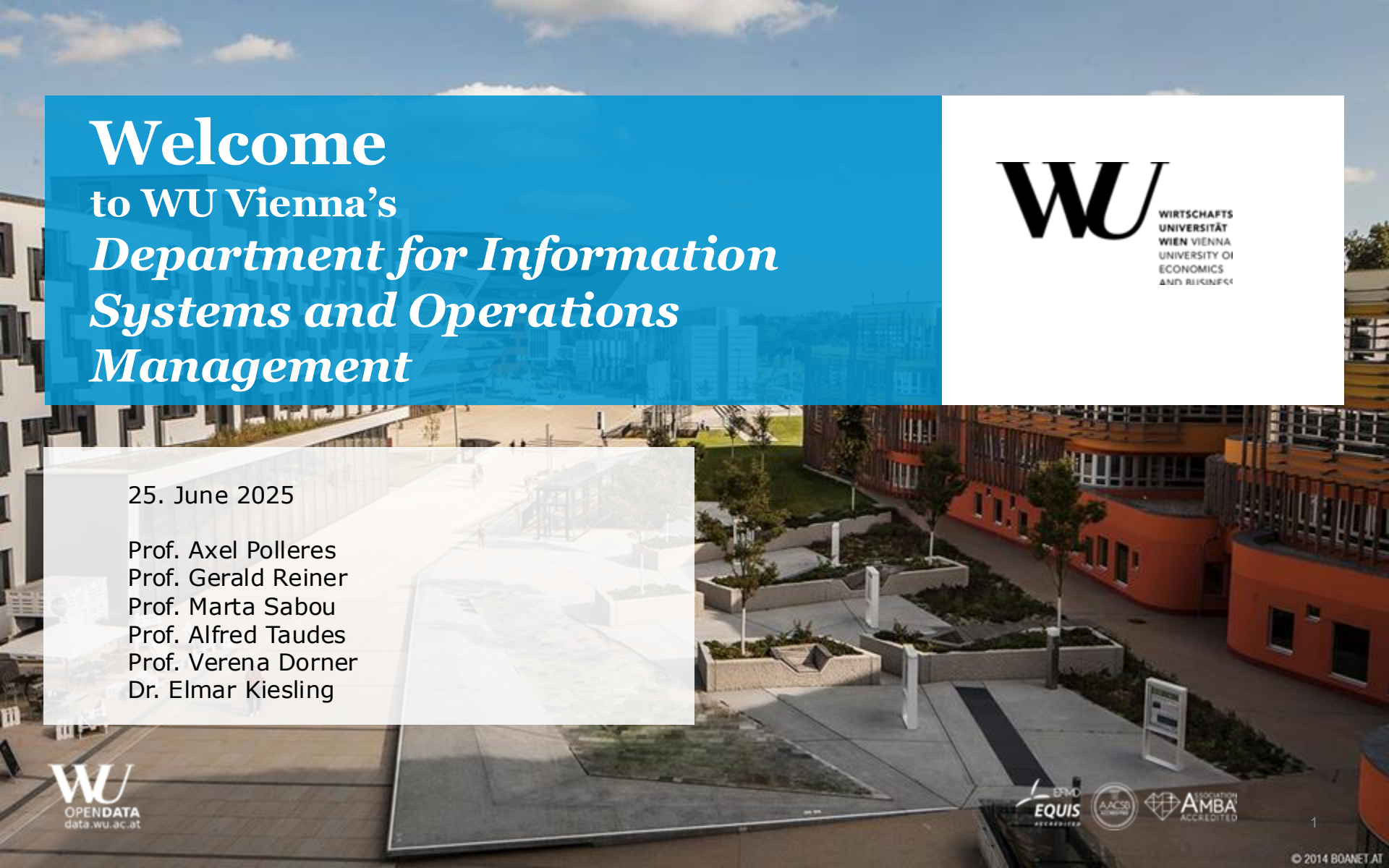
Welcome

to WU Vienna's

Department for Information Systems and Operations Management



25. June 2025

Prof. Axel Polleres
Prof. Gerald Reiner
Prof. Marta Sabou
Prof. Alfred Taudes
Prof. Verena Dorner
Dr. Elmar Kiesling

About Vienna University of Economics and Business:

- Organisation and Structure… Somee facts about WU

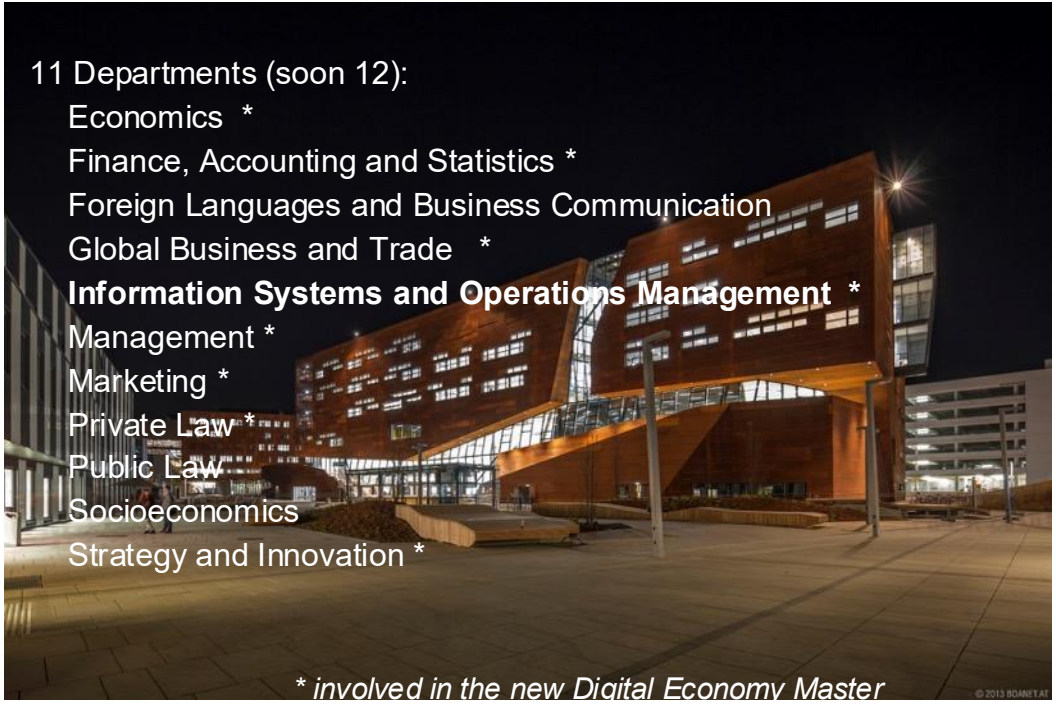
Established in **1898**

Today: 21.489 students

FACULTY AND STAFF[1]

Total faculty[2]	597 (44% women)
Teachers	116 (43% women)
Administrative staff	546 (68% women)
Total	1,259 (54% women)

[2] not including project staff, source: ***WU Facts & Figures***



Our Department:

WU WIRTSCHAFTS UNIVERSITÄT WIEN VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

Department Board –

Univ.Prof. Dr.techn. Axel Polleres
Department Head

Univ.Prof. Mag.Dr. Gerald Reiner
Deputy Department Head

Mag.phil. Julia Landgraf
Department Manager

- INSTITUTE FOR COMPLEX NETWORKS ›
- INSTITUTE FOR DATA, ENGERY, AND SUSTAINABILITY ›
- INSTITUTE FOR DATA, PROCESS, AND KNOWLEDGE MANAGEMENT ›
- DIVISION KNOWLEDGE MANAGEMENT ›
- INSTITUTE FOR DIGITAL ECOSYSTEMS ›
- INSTITUTE FOR DISTRIBUTED LEDGERS AND TOKEN ECONOMY ›
- INSTITUTE FOR INFORMATION MANAGEMENT AND CONTROL ›
- INSTITUTE FOR INFORMATION SYSTEMS AND SOCIETY ›
- INSTITUTE FOR PRODUCTION MANAGEMENT ›

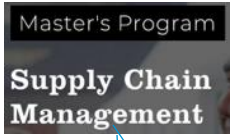
Research Institutes & Competence Centers:

- COMPUTATIONAL METHODS (FIRM) ›
- CRYPTOECONOMICS ›
- EXPERIMENTAL RESEARCH ›
- SUPPLY CHAIN MANAGEMENT ›
- APPLIED AI COMPETENCE CENTER >

EQUIS ACCREDITED AACSB ACCREDITED ASSOCIATION AMBA ACCREDITED

Our Department: Selected Collaborations within WU:

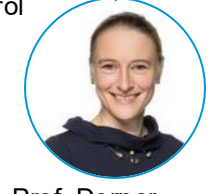
Cross-departamental Master Programs



Department for Information Systems & Operations Management

Prof. Bernroider
Information Management & Control

Prof. Surana
Endowment Chair: Data, Energy, and Sustainability



Prof. Dorner
Digital Ecosystems

Prof. Polleres
Data, Process Management

Prof. Sabou
Semantic Systems, Knowledge Management

Prof. Reiner
Supply-Chain Management

Research Institutes & Competence Centers:

Prof. Stagl
Competence Center for Sustainability Transformation and Responsibility (STaR)

Prof. Taudes
Research Inst. Cryptoeconomics

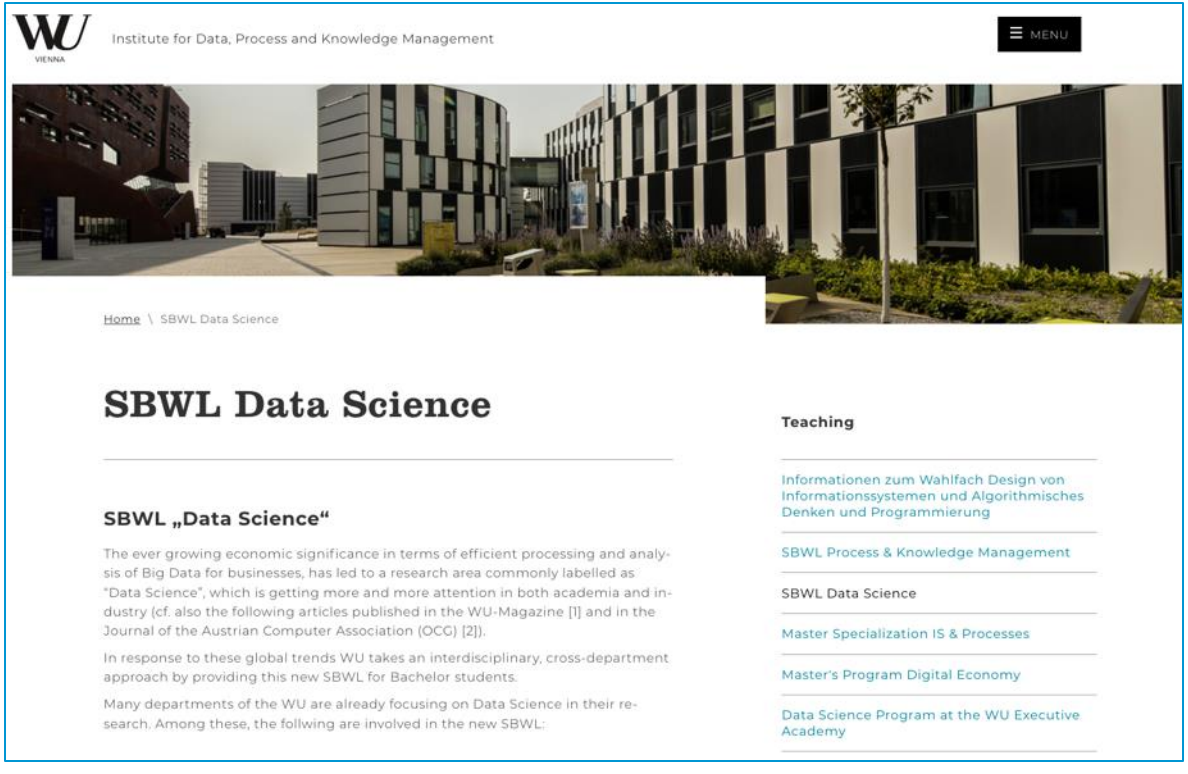
Prof. Wakolbinger
Research Inst. Supply Chain Management (SCM)

Prof. Hornik
Research Inst. Computational Methods (FIRM)

Teaching: Undergraduate

Undergraduate Specialiszation Data Science/ WU Data Science Lab

SBWL Data Science



https://www.wu.ac.at/en/dpkm/teaching/sbwl-data-science

Data Science SBWL: Organisation

https://www.wu.ac.at/dpkm/teaching/sbwl-data-science/

Schedule:

SS 2025	WS 2025/2026
• Data Processing 1 • Data Processing 2 • Data Analytics	• Applications of Data Science • Data Science Lab

Next cohort:

WS 2025/2026	SS 2026
• Data Processing 1 • Data Processing 2 • Data Analytics	• Applications of Data Science • Data Science Lab

What is the Data Science Lab?

- Final course of the **SBWL Data Science**, an **interdisciplinary specialization** in the **Bachelor program** jointly delivered by **four WU departments**.
- Structured around **capstone project** in which student teams tackle challenging **real-world problems** provided by an **industry partner** as "customer".

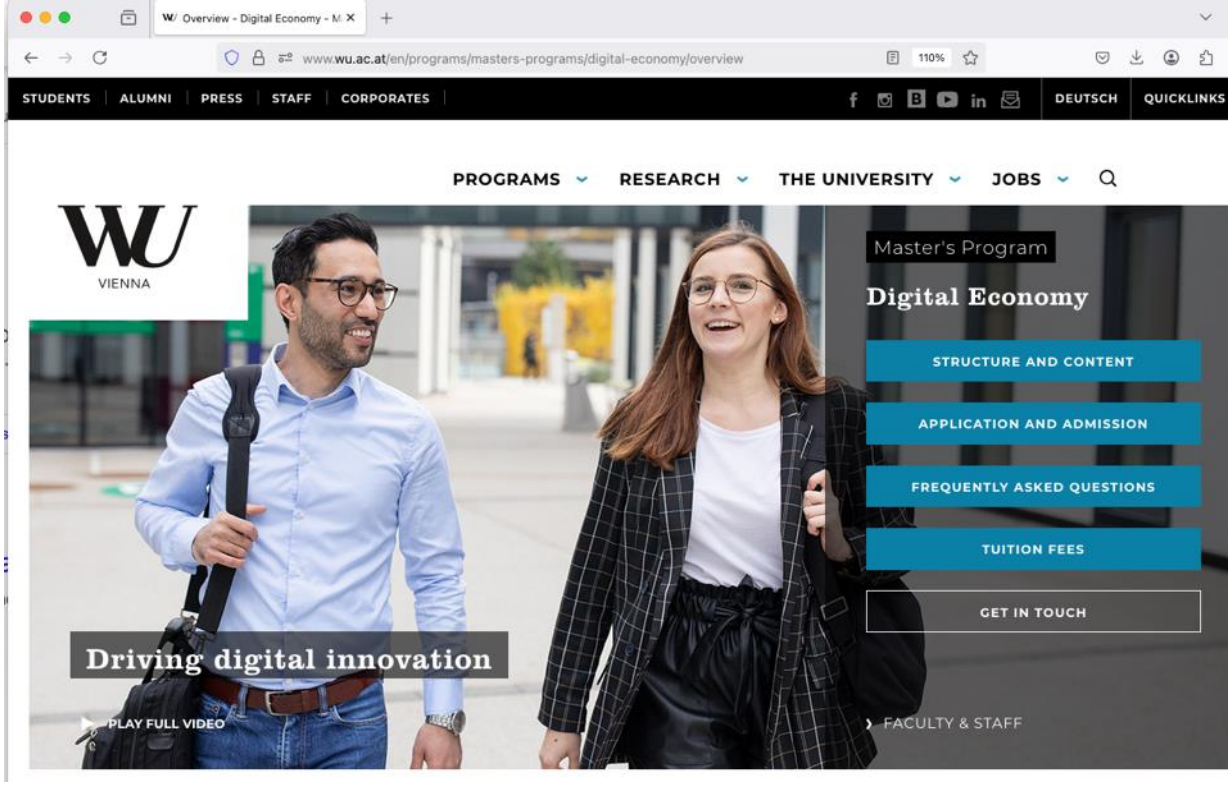
- 100+ Projects
- 500+ Students
- 40+ industry partners

*Topic: „Innovative Cooperations and Partnerships" 2023

Some of our industry partners
(present and past)

Teaching: Master

Digital Economy - Master



https://www.wu.ac.at/en/programs/masters-programs/digital-economy/

Digital Economy: Curriculum

Bridging Courses: IT & IS Skills, Applied Microeconomics

1. WS	Digital Markets and Strategies[2]	IT Gov., Risk and Control[1]	Marketing and Innovation[1]	Bus. Process Management[1]	Value-based System Engineering[1]	System Dev. and Operations[1]
2. SS	Business Project[3]	Transformative Management[1]	IT Law[1]	Data Manag. and Analytics[1]	Distributed Systems[1]	Security and Privacy[1]
3. WS	Research & Industry Lab[3]	Elective(s) I[3]	Master Thesis Seminar[1]			
4. SS	Elective(s) II[3]	Master Thesis[4]				

Index	ECTS	Working hours
1 = 4 ECTS	4	100
2 = 8 ECTS	8	200
3 = 12 ECTS	12	300
4 = 20 ECTS	20	400

3 Specializations
(selectable from a total of 24 ECTS)

Information Systems

- Data Science and Artificial Intelligence (12 ECTS)
- Digital Network Analytics (12 ECTS)
- Digital Ethics and Sustainability (12 ECTS)
- Business Process and Risk Management (12 ECTS)
- Digital Ecosystems (12 ECTS)
- Blockchain and Distributed Ledger Technology (12 ECTS)

Digital Economics and Law

- Advanced Topics in IT Law (6 ECTS)
- Economics of Digitalization (6 ECTS)
- One course block from Information Systems (12 ECTS)

Digital Business, Management and Strategy

- Critical Thinking in Data Analytics (6 ECTS)
- Advanced Topics in Strategy (6 ECTS)
- Advanced Topics in Finance (6 ECTS)
- Advanced Topics in Logistics (6 ECTS)
- One course block from Information Systems (12 ECTS)

WU MSc Digital Economy Research & Industry Labs

Idea

Apply state-of-the-art skills to genuine business and research projects

Provide learning and research opportunity for both students and industry/research partners

Collaborate to create theoretical and practical insights into the Digital Economy

Lab organisation

Student groups work on dedicated topics

Interdisciplinary groups possible (IS and Management, Strategy, Marketing, Law...)

Industry and research partners coach and collaborate with student groups

WU professors and dedicated PhD students mentor groups

Partners

ÖBB

Verbund

WKO Wirtschaftskammer Österreich

Complexity Science Hub Vienna

Austrian Blockchain Center Research

WU MSc Digital Economy: Research & Industry Labs

Follow us (MSc Digital Economy) for news on

- projects
- events
- alumni
- partners
- research!

WU Innovative Teaching Award 2023

For innovative teaching and partnerships

Prof. Verena Dorner
Prof. Gerlinde Fellner-Röhling

Master of Science (MSc)
Supply Chain Management (SCM)

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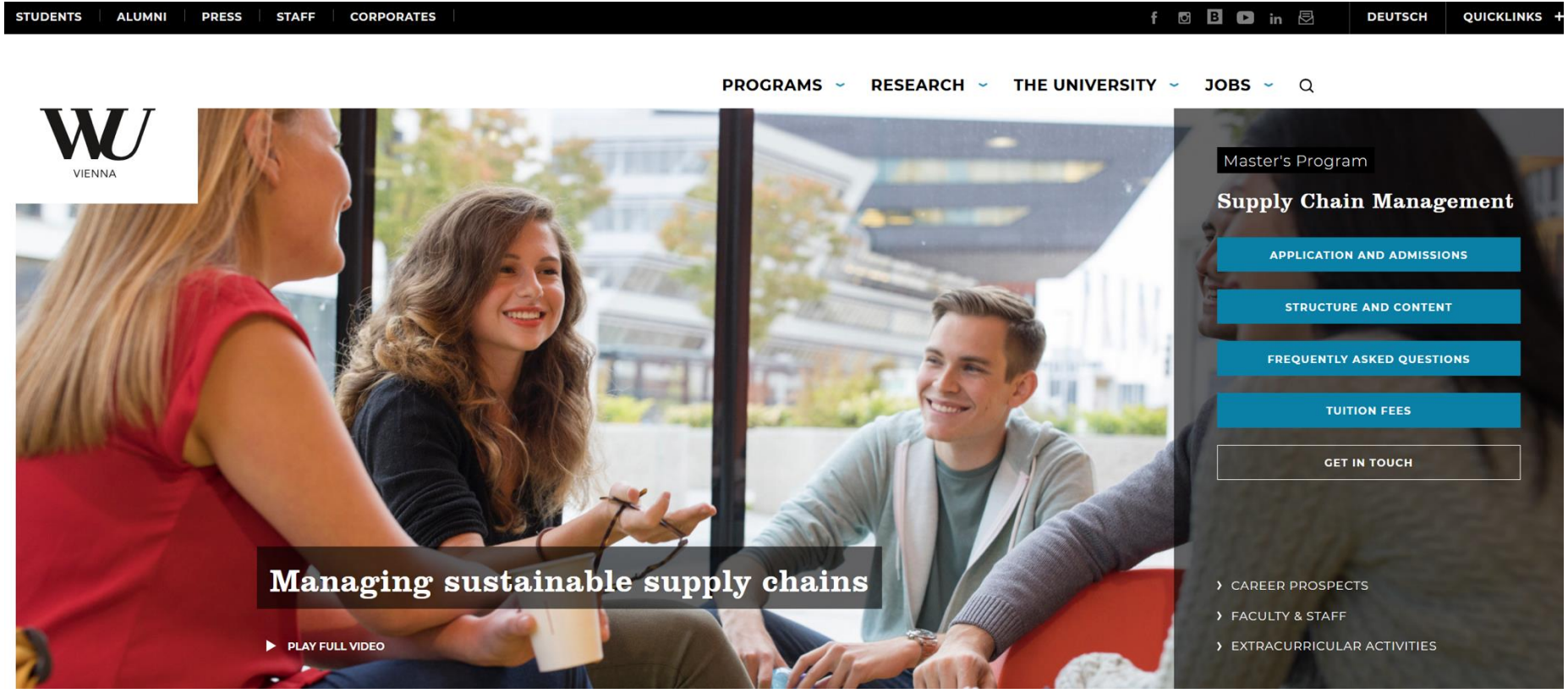

https://www.wu.ac.at/en/programs/masters-programs/supply-chain-management/overview/

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SCM: Curriculum

<table>
<tr><th colspan="6">Master's Program in Supply Chain Management (NEU)</th></tr>
<tr><td>1. Sem</td><td rowspan="2">Supply Chain Strategy and Digital Innovation (15 ECTS)</td><td rowspan="2">Supply Chain Planning and Control (12,5 ECTS)</td><td rowspan="2">Supply Chain Operations (17,5 ECTS)</td><td rowspan="3">Supply Chain Analytics (15 ECTS)</td><td rowspan="4">Research and Industry Projects (15 ECTS)</td></tr>
<tr><td>2. Sem</td></tr>
<tr><td>3. Sem</td><td colspan="3">Electives (2 x 10 ECTS)</td></tr>
<tr><td>4. Sem</td><td>Thesis Seminar (5 ECTS)</td><td colspan="3">Master's Thesis (20 ECTS)</td></tr>
</table>

2nd year: Electives, Seminar Courses and Master Thesis

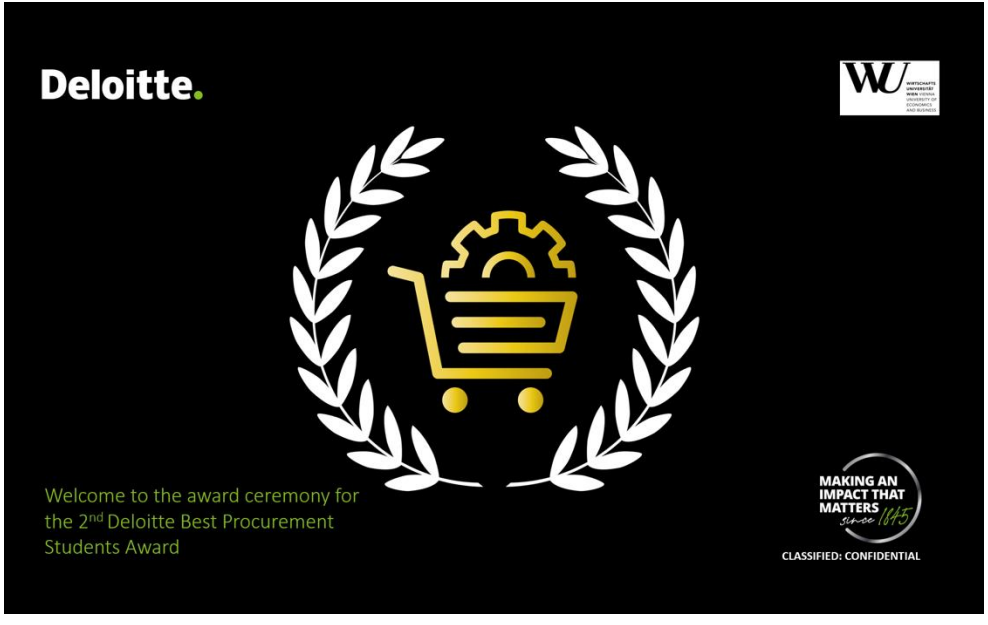
Electives: 2 out of 9
Advanced Methods and Tools in Supply Chain Analytics
Business Intelligence in Supply Chains
(Innovation and Entrepreneurship in Supply Chain Management)
Location Intelligence in Supply Chains
Marketing Research and Analytics
Recent Topics in Supply Chain Management
Supply Chain Finance and Risk Management
Sustainable and Humanitarian Supply Chains
Transport and Logistics
Supply Chain Management – Course Abroad I*
Supply Chain Management – Course Abroad II*

Seminar Courses: 1 out of 5
Decision Models and Analysis
IT Seminar
Transport and Logistics
Decision Analysis, Algorithms and Optimization
Sustainable Supply Chain Management

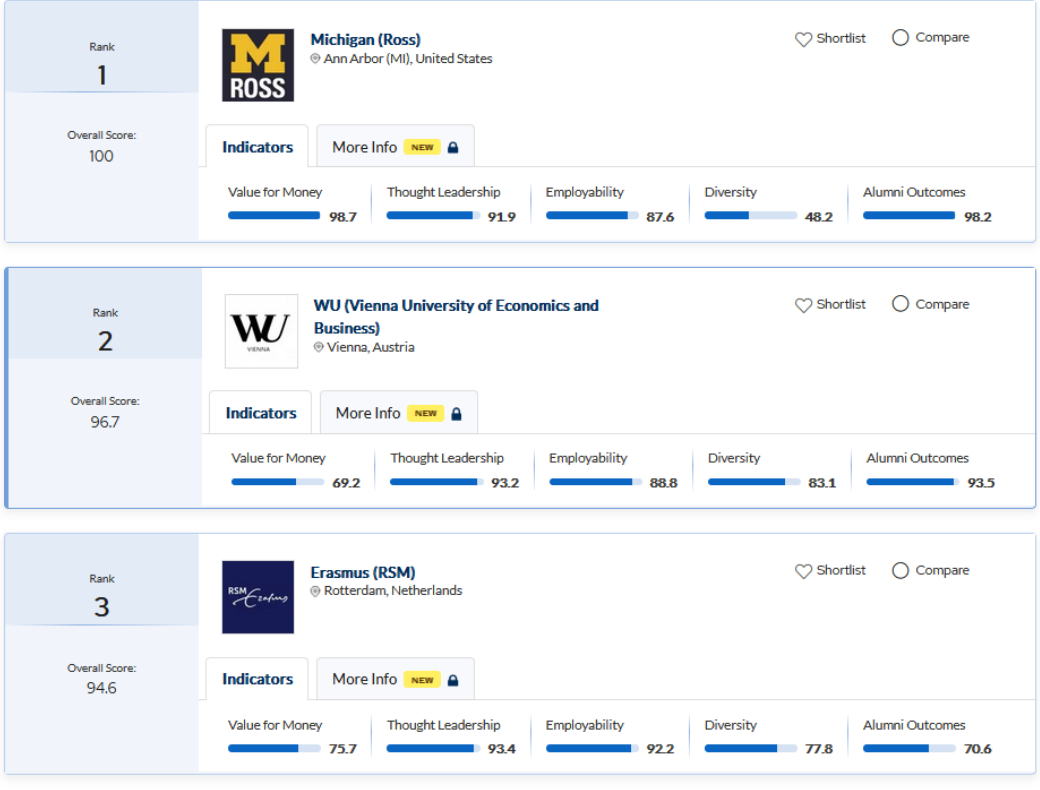
Prepare and Defend Thesis
Research & Industry Projects
Thesis Seminar
Master's Thesis

** Accredited courses in case of exchange semester*

Shaping the Future of Procurement 2024/25 – Deloitte Best Procurement Students Award



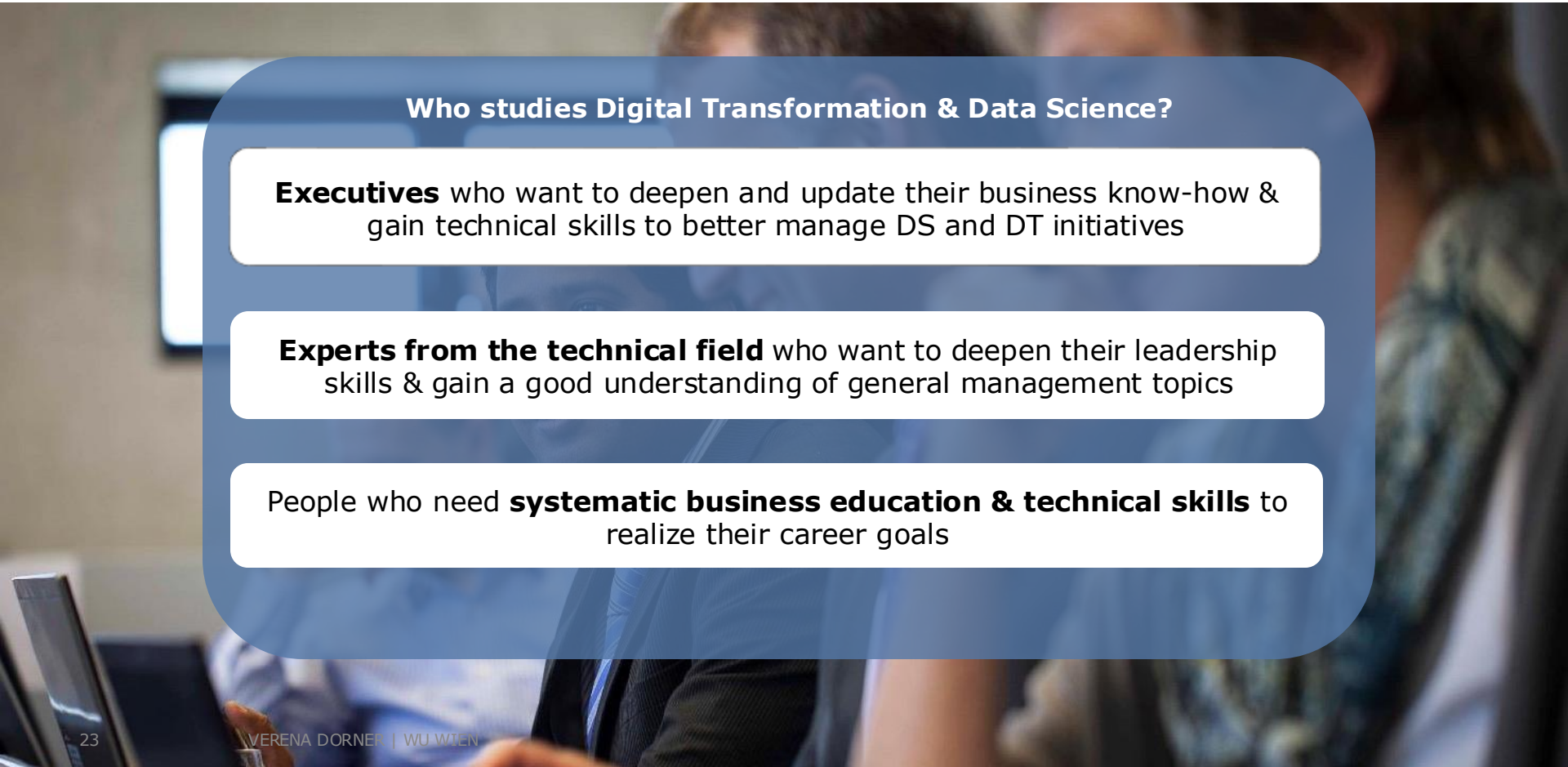
QS Ranking



https://www.topuniversities.com/business-masters-rankings/supply-chain-management

Teaching: Executive Education

Executive MBA
Digital Transformation & Data Science



Who studies Digital Transformation & Data Science?

Executives who want to deepen and update their business know-how & gain technical skills to better manage DS and DT initiatives

Experts from the technical field who want to deepen their leadership skills & gain a good understanding of general management topics

People who need **systematic business education & technical skills** to realize their career goals

Executive MBA
Digital Transformation & Data Science

18
Months duration

70%
International students

15
Industries represented

13
Years working experience Ø

5
Years leadership experience Ø

37
Years age of participants Ø

Top 5 functions

*Figures based on last 3 intakes

Digital Transformation

Data Science

Electives
- Blockchain Transforming Business
- Data Governance
- Organizational Design with Agile Leadership

Int'l Immersion

Male/Female

International immersion 2024

HARVARD
Faculty Club

Research: Competence Center

WU Competence Center for Applied AI and Scientific Computing

Computational Methods and Infrastructure

Methodological research on computational methods and AI modelling

Provides infrastructure and technological research support

- ► enables researchers to explore and use cloud services
- ► provides access to state-of-the art codes/pre-trained models
- ► enables researchers to run research on algorithms and architectures

Applications of AI

Research on AI applications and consequences on business and society

Facilitates applied AI research and builds up an AI community

- ► ensures compliant research in experimental settings
- ► disseminates AI knowledge, provides training
- ► builds up practice contacts and industry collaborations

Some Applications of AI@Institute for Digital Ecosystems

GenAI in Supply Chains

with INESC-TEC in Portugal

Christina Schamp
WU Vienna

Verena Dorner
WU Vienna

AI literacy

with colleagues from WU, TU Wien

How AI shapes work

with colleagues from WU Wien

Gerlinde Fellner-Röhling
WU Wien

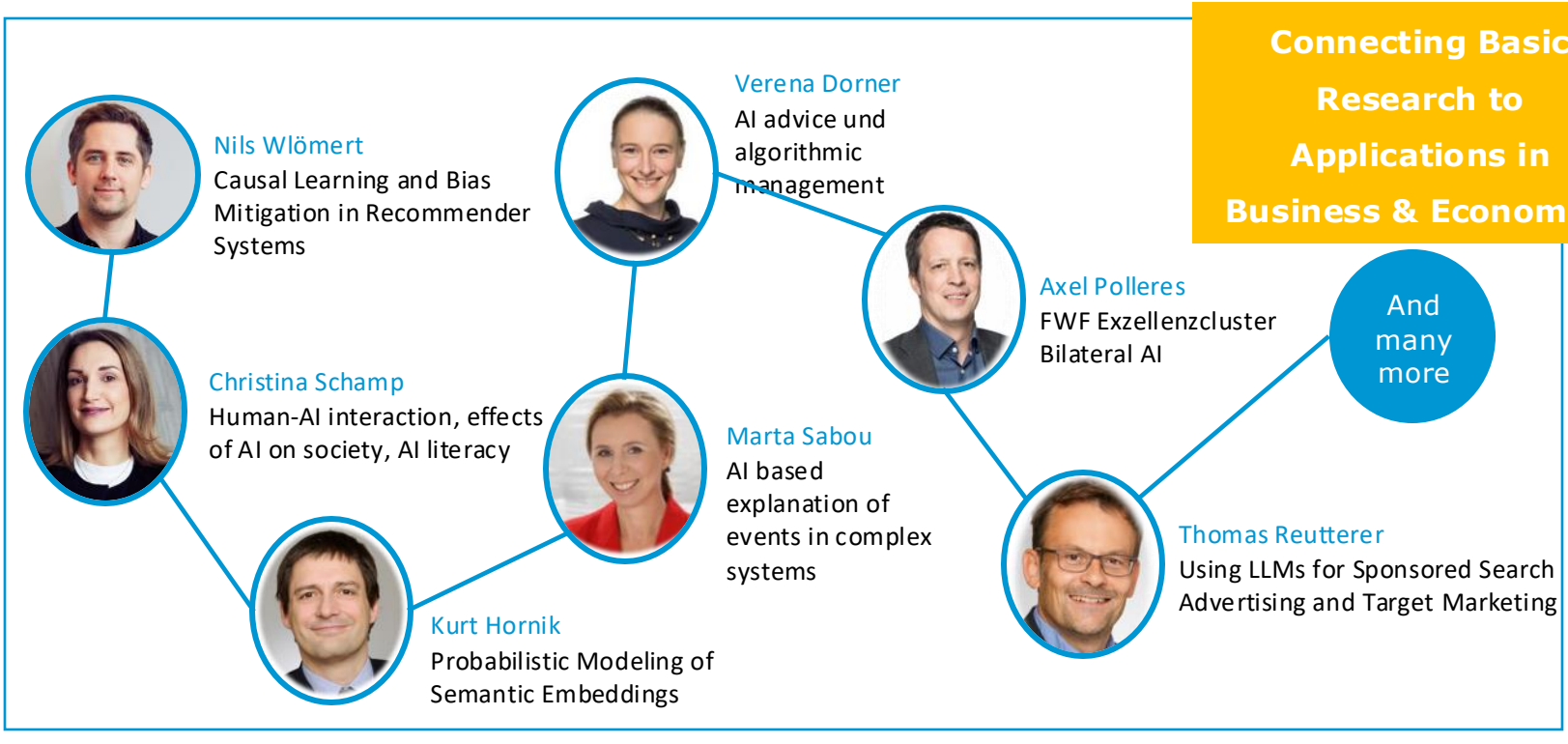
Recommender systems

with colleagues from Uni Wien, TU Wien

Peter Knees
TU Wien

Verena Dorner
WU Vienna

WU Competence Center for Applied AI and Scientific Computing



Research: National Collaborations in Austria

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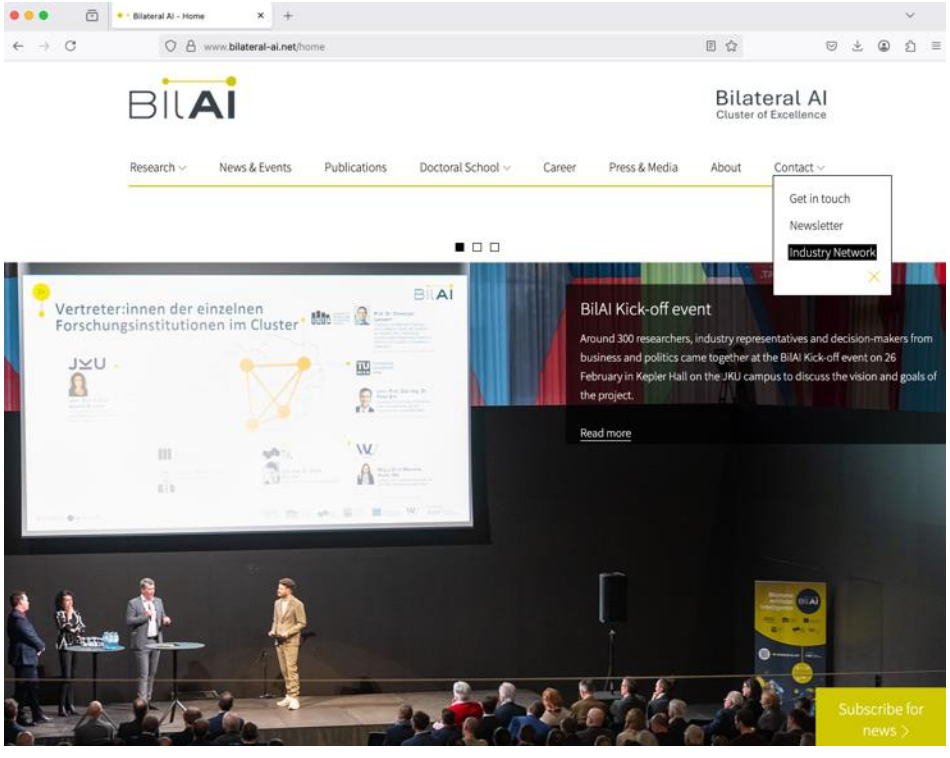
Basic Research:
Bilateral AI (BiLAI) Cluster of Excellence



https://www.bilateral-ai.net/home

Bilateral AI

CLUSTER OF EXCELLENCE

BilAI

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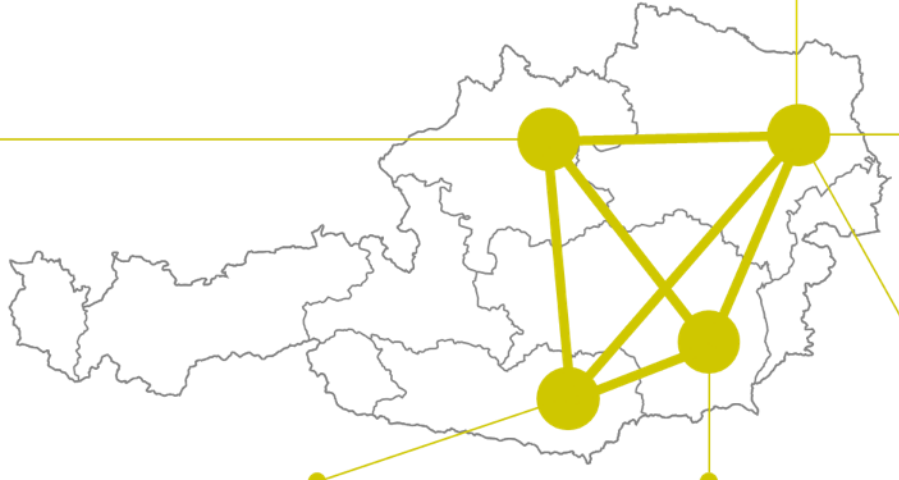
FWF Österreichischer Wissenschaftsfonds



ISTA Institute of Science and Technology Austria

Christoph Lampert
Machine Learning
Trustworthy Learning

- Machine Learning and Computer Vision group
- ELLIS Unit ISTA

JKU

Martina Seidl
Symbolic AI
SAT Solving
Formal methods

Sepp Hochreiter
Machine Learning
LSTM
Vanishing gradient

- Institute for Machine Learning
- ELLIS Unit Linz
- LIT AI Lab
- Institute for Symbolic Artificial Intelligence

TU WIEN TECHNISCHE UNIVERSITÄT WIEN

Agata Ciabattoni
Logic Reasoning

Thomas Eiter
Symbolic AI
Knowledge representation

- Institute for Logic and Computation

UNIVERSITÄT KLAGENFURT

Gerhard Friedrich
Symbolic AI
Model-based reasoning

- Institute for Artificial Intelligence and Cybersecurity

TU Graz

Robert Legenstein
Machine Learning
Computational Neuroscience

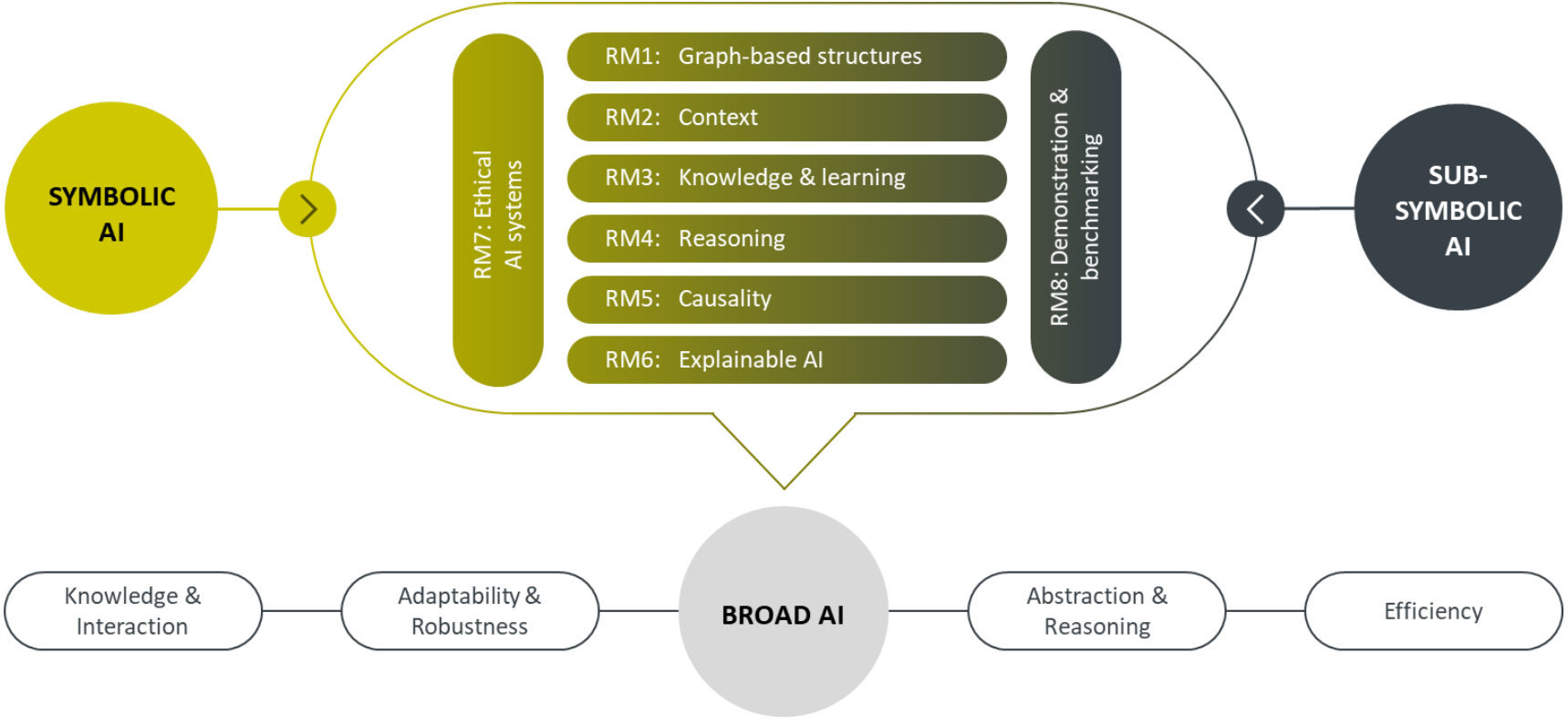
- Institute of Machine Learning and Neural Computation

WU VIENNA

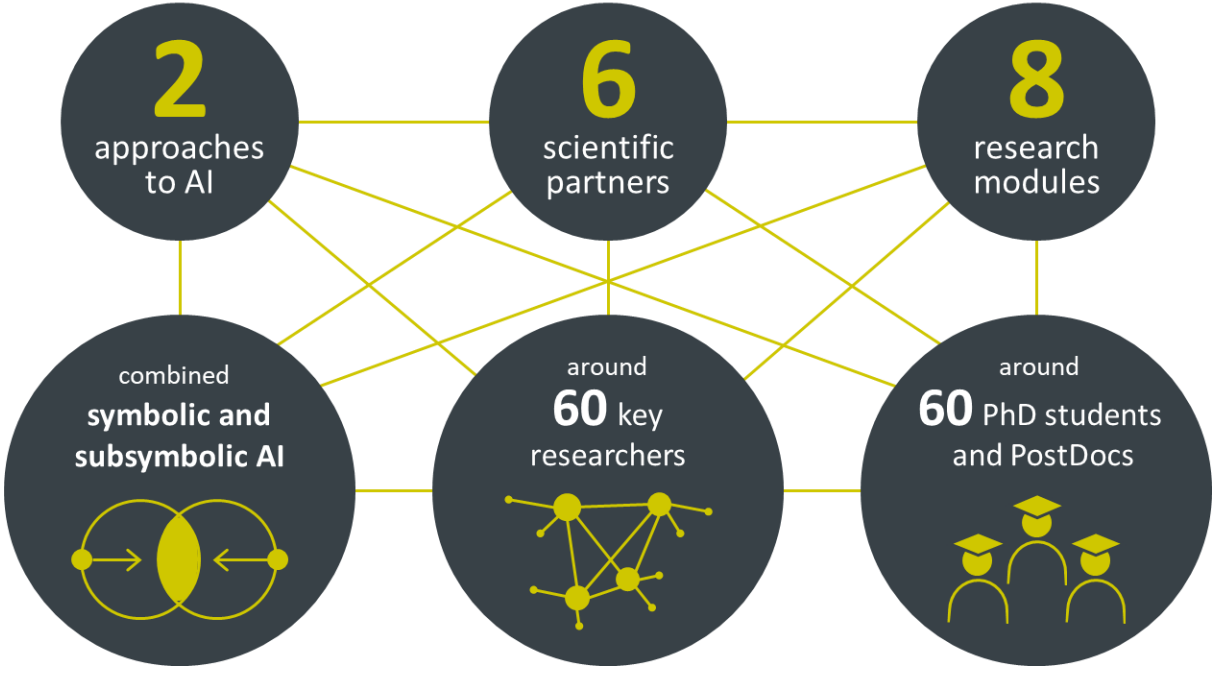
Axel Polleres
Knowledge Graphs

- Institute for Data Process and Knowledge Management

Bilateral AI



Bilateral AI



2 Wittgenstein Preisträger
10 ERC Grants

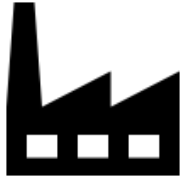
Bilateral AI

Outreach:
Provide value to Practice and Society:

Public

Discussions&Panels

Education Initiatives



Industry

Industry Workshops

Industry Network

Startups

Innovation Workshops

Incubator Workshops

Interdisciplinary Research: Partnering for Digital Humanism (TU Vienna, Uni Wien)

Digital Humanism Doctoral College - Shaping a responsible digital future

2024-11-06, DOCTORAL SCHOOL

We are excited to announce the launch of the new "Digital Humanism" Doctoral College together with Uni Wien and WU Wien!

From WU Vienna:

... and many more

Applied Research:

FAIR-AI

Fostering Austria's Innovative strength and Research excellence in Artificial Intelligence

FFG Forschung wirkt.

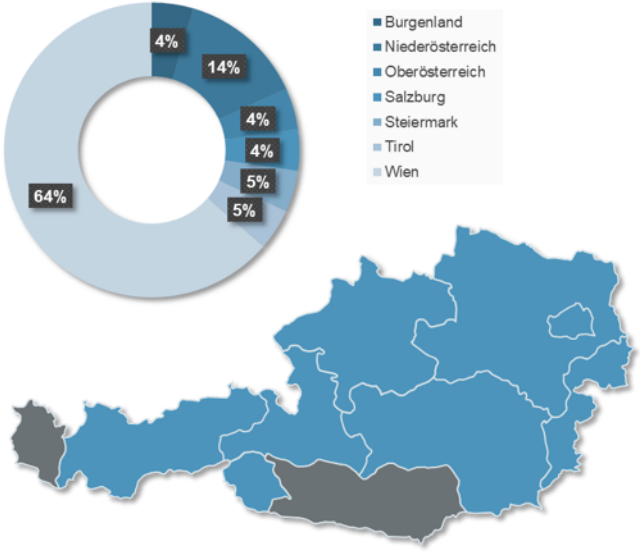
FTE NATIONALSTIFTUNG FORSCHUNG | TECHNOLOGIE | ENTWICKLUNG

Artificial Intelligence Mission Austria
Förderinitiative (Aim At)
Leitprojekt

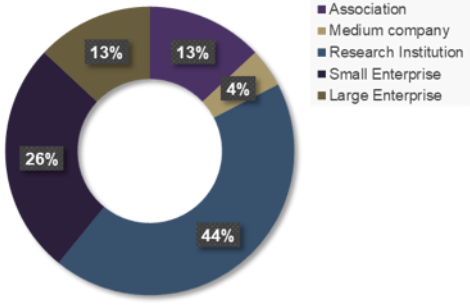
Vorstellung der Teilnehmer

- **Projektpartner**
  - 22 **Partnerorganisationen**
  - 111 **MitarbeiterInnen**
  - 7 **Bundesländer**

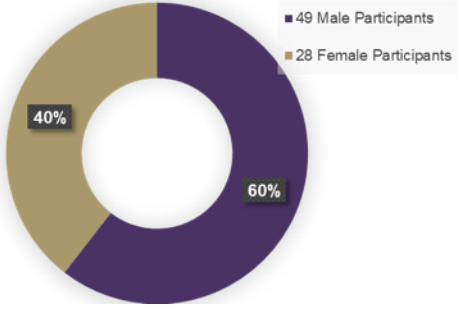
Cross-location cooperations



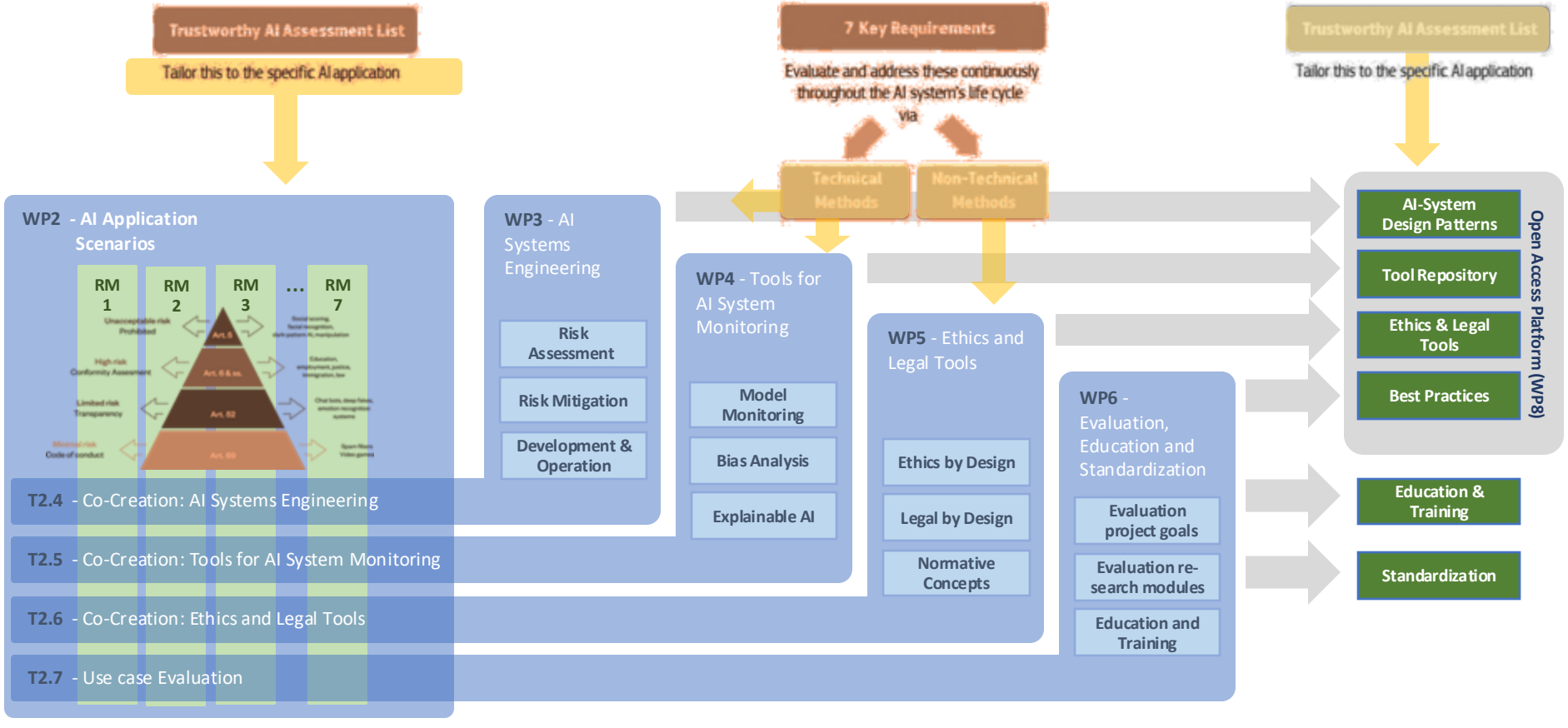
Partner Types



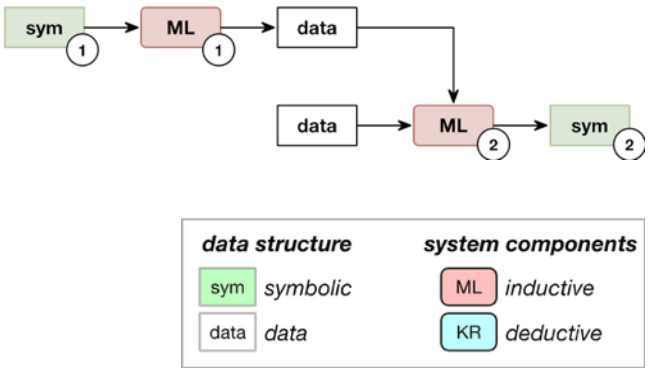
Gender Balance



Research Modules



WP 3 - Foundations: AI System Design Patterns

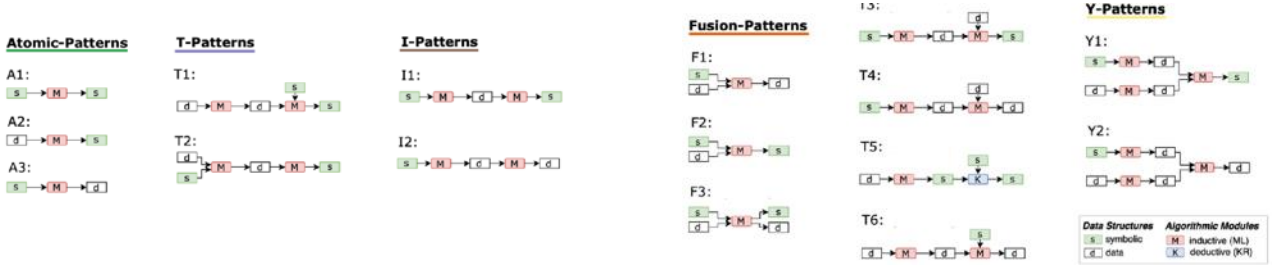


AI system design patterns as abstractions to:

(1) make AI system architecture transparent to stakeholders with heterogeneous AI knowledge;
(2) identify risks at system component level;
(3) trace risk propagation;
(4) derive targeted mitigation strategies;
(5) select system design patterns taking into account the risks associated with each pattern.

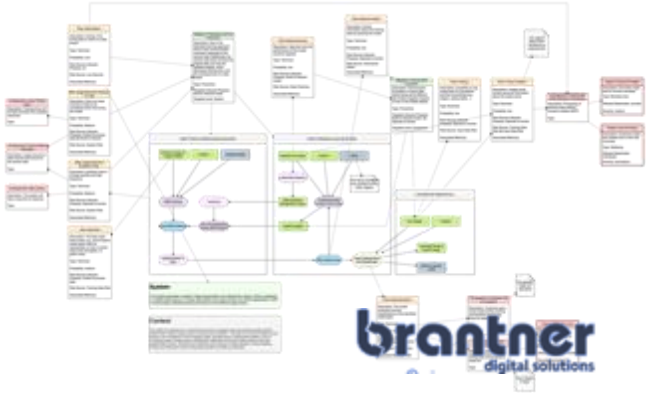
Boxology v1 – cf. [1]

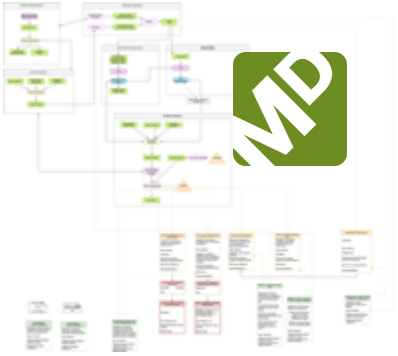
Design patterns for hybrid AI systems:



[1] van Harmelen F, ten Teije A. A boxology of design patterns for hybrid learning and reasoning systems. J. of Web Engineering. 2019.
[2] A.Breit et. al, "Combining machine learning and semantic web: A systematic mapping study," ACM Computing Surveys, 2023.
[3] F. J. Ekaputra et. al, "Describing and Organizing Semantic Web and Machine Learning Systems in the SWeMLS-KG," ESWC 2023.

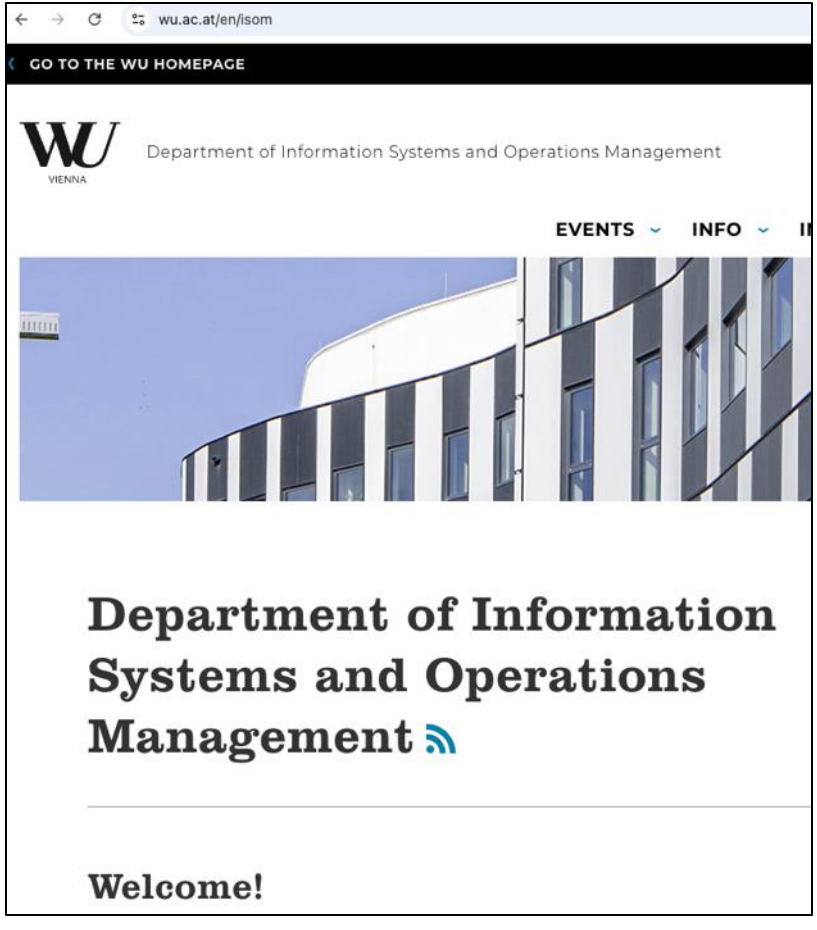
Extension and application to industrial use cases





UCs

Thank you! If you want to know more... https://www.wu.ac.at/en/isom



VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS

Prof. Axel Polleres
Inst. for Data, Process and Knowledge Management
Department of Information Systems and Operations

WU – Wirtschaftsuniversität Wien
Vienna University of Economics and Business