

Vorlesungsverzeichnis

Master of Science - Data Science
Prüfungsversion Wintersemester 2018/19

Sommersemester 2022

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Abkürzungsverzeichnis

Veranstaltungsarten

AG	Arbeitsgruppe
B	Blockveranstaltung
BL	Blockseminar
DF	diverse Formen
EX	Exkursion
FP	Forschungspraktikum
FS	Forschungsseminar
FU	Fortgeschrittenenübung
GK	Grundkurs
HS	Hauptseminar
KL	Kolloquium
KU	Kurs
LK	Lektürekurs
LP	Lehrforschungsprojekt
OS	Oberseminar
P	Projektseminar
PJ	Projekt
PR	Praktikum
PS	Proseminar
PU	Praktische Übung
RE	Repetitorium
RV	Ringvorlesung
S	Seminar
S1	Seminar/Praktikum
S2	Seminar/Projekt
S3	Schulpraktische Studien
S4	Schulpraktische Übungen
SK	Seminar/Kolloquium
SU	Seminar/Übung
TU	Tutorium
U	Übung
UN	Unterricht
V	Vorlesung
VE	Vorlesung/Exkursion
VP	Vorlesung/Praktikum
VS	Vorlesung/Seminar
VU	Vorlesung/Übung
WS	Workshop

Andere

N.N.	Noch keine Angaben
n.V.	Nach Vereinbarung
LP	Leistungspunkte
SWS	Semesterwochenstunden
	Belegung über PULS
	Prüfungsleistung
	Prüfungsnebenleistung
	Studienleistung
	sonstige Leistungserfassung

Veranstaltungsrhythmen

wöch.	wöchentlich
14t.	14-täglich
Einzel	Einzeltermin
Block	Block
BlockSa	Block (inkl. Sa)
BlockSaSo	Block (inkl. Sa, So)

Vorlesungsverzeichnis

Bridge Modules

FM2 - Foundations of Computer Science

Für dieses Modul werden aktuell keine Lehrveranstaltungen angeboten

MAT-DSBM1 - Foundations of Stochastics

Für dieses Modul werden aktuell keine Lehrveranstaltungen angeboten

Compulsory Modules

MATVMD837 - Statistical Data Analysis

Für dieses Modul werden aktuell keine Lehrveranstaltungen angeboten

MATVMD838 - Bayesian Inference and Data Assimilation

95025 VU - Bayesian inference and data assimilation

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
Alle	V	Mo	08:15 - 09:45	wöch.	2.27.1.01	18.04.2022	Prof. Dr. Sebastian Reich
Alle	V	Di	08:15 - 09:45	wöch.	2.10.0.26	19.04.2022	Prof. Dr. Sebastian Reich
1	U	Mi	12:15 - 13:45	wöch.	2.05.1.06	20.04.2022	Jakiw Ioan Pidstrigach
2	U	Di	12:15 - 13:45	wöch.	2.05.1.06	19.04.2022	Jakiw Ioan Pidstrigach

Leistungen in Bezug auf das Modul

PNL 517411 - Vertiefende Vorlesung im Bereich Bayes'sche Inferenz und Datenassimilation und Übung (unbenotet)

INF-DS-C1 - Machine Learning

94120 VU - Intelligente Datenanalyse & Maschinelles Lernen I

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
Alle	V	Mi	14:00 - 16:00	wöch.	2.27.1.01	20.04.2022	Prof. Dr. Tobias Scheffer
1	U	Di	14:00 - 16:00	wöch.	2.70.0.11	19.04.2022	Prof. Dr. Tobias Scheffer
2	U	Mi	12:00 - 14:00	wöch.	2.70.0.11	20.04.2022	Prof. Dr. Tobias Scheffer
3	U	Do	16:00 - 18:00	wöch.	2.70.0.11	21.04.2022	Prof. Dr. Tobias Scheffer
4	U	Fr	14:00 - 16:00	wöch.	2.70.0.11	22.04.2022	Prof. Dr. Tobias Scheffer

Kommentar

Die Veranstaltung beschäftigt sich mit Algorithmen, die aus Daten lernen können. Algorithmen des maschinellen Lernens gewinnen aus Daten Modelle, mit denen sich dann Vorhersagen über das beobachtete System treffen lassen. Anwendungen für Datenanalyse-Verfahren erstrecken sich von der Vorhersage von Kreditrisiken über die Auswertung astronomischer Daten bis zu persönlichen Musikempfehlungen. Die Veranstaltung setzt sich aus einem Vorlesungs- und einem Projektteil zusammen. Der Vorlesungsteil vermittelt die Grundlagen des maschinellen Lernens. Im Projektteil werden anwendungsnahe Aufgaben eigenständig in Python bearbeitet.

Leistungsnachweis

Projektaufgabe, Klausur oder mündliche Prüfung

Leistungen in Bezug auf das Modul

PNL 557103 - Laborübung (unbenotet)

INF-DS-C2 - Data Infrastructures and Software Engineering **94135 PR - Principles of Data- and Knowledge-Base Systems**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PR	Mo	16:00 - 18:00	wöch.	2.70.0.10	25.04.2022	Prof. Dr. Torsten Schaub, Francois Laferriere

Nach Absprache

KommentarMoodle course: [moodle](#)**Literatur**

Principles of Database & Knowledge-Base Systems by Jeffrey D. Ullman W. H. Freeman & Co. New York, NY, USA

 94136 VU - Principles of Data- and Knowledge-Base Systems

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
Alle	V	Fr	14:00 - 16:00	wöch.	2.25.F0.01	22.04.2022	Prof. Dr. Torsten Schaub
1	U	Di	16:00 - 18:00	wöch.	2.70.0.11	26.04.2022	Francois Laferriere
2	U	Do	16:00 - 18:00	wöch.	2.70.0.10	28.04.2022	Francois Laferriere

KommentarMoodle course: [moodle](#)**Literatur**

Principles of Database & Knowledge-Base Systems by Jeffrey D. Ullman W. H. Freeman & Co. New York, NY, USA

Leistungen in Bezug auf das Modul**PNL** 557111 - Vorlesung und Übung (unbenotet)**INF-DS-C3 - Data Science and Business Analytics**

Für dieses Modul werden aktuell keine Lehrveranstaltungen angeboten

INF-DS-C4 - Applied Data Science **94125 DF - Multi-agent path finding**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VU	Mo	14:00 - 16:00	wöch.	2.70.0.08	25.04.2022	Prof. Dr. Torsten Schaub, Etienne Tignon

Kommentar

Multi- agent path finding is the name of the problem of planning path of a multitude of agents. The goal is trying to avoid collisions between the agents while trying to optimize the paths. In this lecture, the students will read relevant paper on the subject, write summary about them and participate in a practical project.

There is the link to the moodle page.

The password is mapf29138mcp

Leistungen in Bezug auf das Modul**PNL** 557132 - Übung oder Projekt (unbenotet) **95031 VU - Theoretical Systems Biology**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	U	Mo	14:15 - 15:45	wöch.	2.05.1.06	18.04.2022	Anahita Samih
1	V	Mi	08:15 - 09:45	wöch.	2.05.1.06	20.04.2022	Dr. Niklas Hartung

Kommentar

NOTE: The first lecture (April 20th) will be delivered online via Zoom. Please subscribe to the Moodle course page (--> [LINK](#)) for login information. Thereafter, all lectures/exercises will take place on-site.

Leistungen in Bezug auf das Modul

PNL 557132 - Übung oder Projekt (unbenotet)

Elective Modules - Research Modules

INF-DS-RMA - Research Module A

94215 PJ - Declarative Problem Solving

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	Mo	12:00 - 14:00	wöch.	2.70.0.10	25.04.2022	Francois Laferriere, Javier Romero Davila, Prof. Dr. Torsten Schaub

Nach Absprache

Kommentar

In this project, student teams build software systems whose core consists of problem solvers for combinatorial (optimization) problems, like answer set programming

Voraussetzung

Good knowledge in ASP and/or SAT.

Leistungsnachweis

Implementation, evaluation, presentation, and documentation

Bemerkung

Offline communication is conducted primarily via the associated moodle page.

Announcements are also made through the email list of registered students in puls.

Questions can be address to krprojects@lists.cs.uni-potsdam.de. krprojects@lists.cs.uni-potsdam.de

Lerninhalte

On individual basis

Kurzkommentar

Joint kick-off event for all projects of the professorship Knowledge Processing and Information Systems as announced in course catalogue of the department and the associated moodle page

[moodle](#)

Zielgruppe

MSc students who want to deepen their practical knowledge in declarative modelling techniques and their application

Leistungen in Bezug auf das Modul

SL 557142 - Übung oder Projekt (unbenotet)

94234 PJ - Intelligent Logistics Technology							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	Mo	12:00 - 14:00	wöch.	2.70.0.10	25.04.2022	Prof. Dr. Torsten Schaub, Javier Romero Davila, Francois Laferriere, Etienne Tignon

Nach Absprache

Kommentar

In this project, student teams build software systems addressing problems in warehouse logistics using problem solvers for answer set programming

Voraussetzung

Knowledge in answer set programming (and python).

Leistungsnachweis

Implementation, evaluation, presentation, and documentation.

Bemerkung

Offline communication is conducted primarily via the associated moodle page.

Announcements are also made through the email list of registered students in puls.

Questions can be address to krprojects@lists.cs.uni-potsdam.de.

Lerninhalte

On individual basis.

Kurzkommentar

Joint kick-off event for all projects of the professorship Knowledge Processing and Information Systems as announced in course catalog of the department and the associated moodle page.

[moodle](#)

Zielgruppe

Students interested in applying AI-techniques in logistics

Leistungen in Bezug auf das Modul

SL 557142 - Übung oder Projekt (unbenotet)

94239 PJ - Research Module A							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	N.N.	N.N.	Block	N.N.	N.N.	Prof. Dr. Tobias Scheffer

Leistungen in Bezug auf das Modul

SL 557141 - Vorlesung oder Seminar (unbenotet)

SL 557142 - Übung oder Projekt (unbenotet)

95319 PJ - Social Media and Business Analytics Project							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	Fr	14:00 - 18:00	wöch.	N.N.	22.04.2022	Prof. Dr. Hanna Krasnova, Katharina Baum, Hannes-Vincent Krause

Raum: 3.06.S19

Kommentar

Dear students,

The **first session of this course will be on April, 22** where we will meet in **room 3.06.S19** to present the structure of the course, topics and to offer you the opportunity to ask questions.

In the course, we will strongly rely on **Moodle** where you can find more details on how the seminar will be organized and a description of the topics we will offer. The details for the Moodle Course will be shared during the first session on April 22.

More details will follow soon. Stay tuned!

Please have in mind that the circumstances due to the COVID-19 pandemic are still highly unpredictable and the hygiene regulations at Uni Potsdam might be subject to change - so please keep yourself up to date. No matter what, we are dedicated to offering you a seminar which enables you to learn as much as possible. Thank you!

Literatur

- Collis, J., Hussey, R. (2013). Business research: A practical guide for undergraduate and postgraduate students. Palgrave Macmillan.
- DeVellis, R. F. Scale Development: Theory and Applications (Vol. 26), Sage Publications, 2011.
- Pedhazur, E. J., and Schmelkin, L. P. Measurement, Design, and Analysis: An Integrated Approach, Psychology Press, 2013.
- Recker J. Scientific Research in Information Systems: A Beginner's Guide, Springer, 2012.

Supplementary Readings: Additional articles and resources will be provided on a need-to basis via Moodle.

Leistungsnachweis

The course performance will be evaluated based on:

- Paper Slam Presentation (May, 6)
- Mid-Term Presentation (June, 3)
- Final Presentation (July, 22)
- Final Report (deadline: August, 30)

Lerninhalte

Social Media and in particular social networking sites have gained tremendous popularity in recent years (e.g. Facebook, Instagram, etc). Significant usage of such sites has recently shaped communication, information retrieval, and the entertainment culture of our society. Facebook alone has over 2.32 billion monthly active users. Against the background of this rapid development, our research investigates its long-term consequences on the society and the individual on behalf of various methodologies. Within this course, we would like to give you the chance to choose and apply one of these yourself within a project that you will work on during the semester.

This seminar/project focuses on conveying four important research methodologies:

- Systematic Literature Review
- Qualitative Data Analysis
- Quantitative Data Analysis
- Big Data Analysis

Students are encouraged to gain a deep understanding of a methodology of their choice, which may be applied within a chosen topic domain. Learning achievements will be presented and students are requested to write a seminar paper. The seminar will be held in English.

Leistungen in Bezug auf das Modul

SL 557142 - Übung oder Projekt (unbenotet)

INF-DS-RMB - Research Module B **94238 PJ - Research Module B**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	N.N.	N.N.	Block	N.N.	N.N.	Prof. Dr. Tobias Scheffer

Leistungen in Bezug auf das Modul

SL 557151 - Vorlesung oder Seminar (unbenotet)

SL 557152 - Übung oder Projekt (unbenotet)

 95319 PJ - Social Media and Business Analytics Project

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	Fr	14:00 - 18:00	wöch.	N.N.	22.04.2022	Prof. Dr. Hanna Krasnova, Katharina Baum, Hannes-Vincent Krause

Raum: 3.06.S19

Kommentar

Dear students,

The **first session of this course will be on April, 22** where we will meet in **room 3.06.S19** to present the structure of the course, topics and to offer you the opportunity to ask questions.

In the course, we will strongly rely on **Moodle** where you can find more details on how the seminar will be organized and a description of the topics we will offer. The details for the Moodle Course will be shared during the first session on April 22.

More details will follow soon. Stay tuned!

Please have in mind that the circumstances due to the COVID-19 pandemic are still highly unpredictable and the hygiene regulations at Uni Potsdam might be subject to change - so please keep yourself up to date. No matter what, we are dedicated to offering you a seminar which enables you to learn as much as possible. Thank you!

Literatur

- Collis, J., Hussey, R. (2013). Business research: A practical guide for undergraduate and postgraduate students. Palgrave Macmillan.
- DeVellis, R. F. Scale Development: Theory and Applications (Vol. 26), Sage Publications, 2011.
- Pedhazur, E. J., and Schmelkin, L. P. Measurement, Design, and Analysis: An Integrated Approach, Psychology Press, 2013.
- Recker J. Scientific Research in Information Systems: A Beginner's Guide, Springer, 2012.

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- Paper Slam Presentation (May, 6)
- Mid-Term Presentation (June, 3)
- Final Presentation (July, 22)
- Final Report (deadline: August, 30)

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- Qualitative Data Analysis
- Quantitative Data Analysis
- Big Data Analysis

Students are encouraged to gain a deep understanding of a methodology of their choice, which may be applied within a chosen topic domain. Learning achievements will be presented and students are requested to write a seminar paper. The seminar will be held in English.

Leistungen in Bezug auf das Modul

SL 557152 - Übung oder Projekt (unbenotet)

Elective Modules - Advanced Module

MAT-DSAM2A - Advanced Statistical Data Analysis A

95027 VU - Non-parametric statistics (Advanced topics in data analysis)							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
Alle	V	Do	08:15 - 09:45	wöch.	2.14.0.47	21.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							
Alle	V	Fr	10:15 - 11:45	wöch.	2.09.0.13	22.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							
1	U	Do	10:15 - 11:45	wöch.	2.09.0.13	21.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							
2	U	Fr	08:15 - 09:45	wöch.	2.09.0.14	22.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							

Kommentar

Please go to the english webpage in PULS - click on EN and the british flag on the right corner - to find informations.

Leistungen in Bezug auf das Modul

SL 551261 - Vorlesung und Seminar (unbenotet)

MAT-DSAM2B - Advanced Statistical Data Analysis B

95027 VU - Non-parametric statistics (Advanced topics in data analysis)							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
Alle	V	Do	08:15 - 09:45	wöch.	2.14.0.47	21.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							
Alle	V	Fr	10:15 - 11:45	wöch.	2.09.0.13	22.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							

1	U	Do	10:15 - 11:45	wöch.	2.09.0.13	21.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							
2	U	Fr	08:15 - 09:45	wöch.	2.09.0.14	22.04.2022	Prof. Dr. Alexandra Carpentier
hybrid							

Kommentar

Please go to the english webpage in PULS - click on EN and the british flag on the right corner - to find informations.

Leistungen in Bezug auf das Modul

PNL 551271 - Vorlesung und Übung (unbenotet)

MAT-DSAM3A - Advanced Data Assimilation and Modeling A **95033 VU - Reinforcement Learning**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	Mo	08:15 - 09:45	wöch.	2.09.0.12	18.04.2022	Dr. Jana de Wiljes
1	U	Mo	10:15 - 11:45	wöch.	2.05.0.11	18.04.2022	Dr. Jana de Wiljes
1	V	Di	10:15 - 11:45	wöch.	2.08.0.17	19.04.2022	Dr. Jana de Wiljes

Leistungen in Bezug auf das Modul

PNL 551282 - Übung (unbenotet)

MAT-DSAM3B - Advanced Data Assimilation and Modeling B **95031 VU - Theoretical Systems Biology**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	U	Mo	14:15 - 15:45	wöch.	2.05.1.06	18.04.2022	Anahita Samih
1	V	Mi	08:15 - 09:45	wöch.	2.05.1.06	20.04.2022	Dr. Niklas Hartung

Kommentar

NOTE: The first lecture (April 20th) will be delivered online via Zoom. Please subscribe to the Moodle course page (--> [LINK](#)) for login information. Thereafter, all lectures/exercises will take place on-site.

Leistungen in Bezug auf das Modul

PNL 551291 - Vorlesung und Übung (unbenotet)

 95033 VU - Reinforcement Learning

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	Mo	08:15 - 09:45	wöch.	2.09.0.12	18.04.2022	Dr. Jana de Wiljes
1	U	Mo	10:15 - 11:45	wöch.	2.05.0.11	18.04.2022	Dr. Jana de Wiljes
1	V	Di	10:15 - 11:45	wöch.	2.08.0.17	19.04.2022	Dr. Jana de Wiljes

Leistungen in Bezug auf das Modul

PNL 551291 - Vorlesung und Übung (unbenotet)

MAT-DSAM8A - Mathematical Foundations of Data Science A **95034 VU - Numerical Linear Algebra**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	Mo	10:15 - 11:45	wöch.	2.09.0.12	18.04.2022	Dr. rer. nat. Thomas Mach
1	U	Mo	12:15 - 13:45	wöch.	2.05.1.12	18.04.2022	Dr. rer. nat. Thomas Mach

1	V	Mi	10:15 - 11:45	wöch.	2.09.0.12	20.04.2022	Dr. rer. nat. Thomas Mach
Links:							
Moodle			https://moodle2.uni-potsdam.de/course/view.php?id=32056				
Kommentar							
This course will partially be taught in the e-learning format (1-2 weeks) in place of in-person instructions (remaining 12-13 weeks). The code to register on moodle is nla.							
Voraussetzung							
This course requires a solid understanding of Linear Algebra, typically taught over two semesters with the second part sometimes called matrix theory, and of numerical methods (interpolation, rounding errors, Newton's method, numerical integration, and solving linear systems with Gaussian elimination).							
Literatur							
There is no single textbook for the course. Possible references include: [1] E. Darve and M. Wootters, Numerical Linear Algebra with Julia, vol. 172, SIAM, 2021. [2] J. W. Demmel, Applied Numerical Linear Algebra, SIAM, 1997. [3] L. N. Trefethen and D. Bau, III., Numerical Linear Algebra, SIAM, Philadelphia, 1997. [4] D. S. Watkins, Fundamentals of Matrix Computations, vol. 64, John Wiley, 2004.							
Leistungsnachweis							
There will be an in personal oral exam at the end of the term, if regulations permit. To qualify for the exam you have to achieve at least 50% of the points in the homework assignments.							
Lerninhalte							
The following topics, among others, will be covered in this course: • solving linear systems and least squares problems, also for large and sparse systems, • eigenvalue problems, • singular value decomposition, • Kronecker products and matrix equations, and • their applications and more.							
Zielgruppe							
This course is aimed for students interested in numerical computations. Numerical linear algebra is at the core of many numerical algorithms, including, among others, PDE solvers, neural networks, and optimization. It forms the heart of the mathematics of the 21st century. Für Studierende Mathematik Lehramt empfehlen wir die Lehrveranstaltung Numerik II, welche sehr ähnliche Themen behandelt. Aus diesem Grund kann Numerical linear algebra nicht länger für Mathematik Bachelor of Science angeboten werden.							
Leistungen in Bezug auf das Modul							
PNL	551313 - Übung (unbenotet)						

MAT-DSAM8B - Mathematical Foundations of Data Science B

95034 VU - Numerical Linear Algebra							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	Mo	10:15 - 11:45	wöch.	2.09.0.12	18.04.2022	Dr. rer. nat. Thomas Mach
1	U	Mo	12:15 - 13:45	wöch.	2.05.1.12	18.04.2022	Dr. rer. nat. Thomas Mach

1	V	Mi	10:15 - 11:45	wöch.	2.09.0.12	20.04.2022	Dr. rer. nat. Thomas Mach
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Links:

Moodle <https://moodle2.uni-potsdam.de/course/view.php?id=32056>

Kommentar

This course will partially be taught in the e-learning format (1-2 weeks) in place of in-person instructions (remaining 12-13 weeks).

The code to register on [moodle](#) is nla.

Voraussetzung

This course requires a solid understanding of Linear Algebra, typically taught over two semesters with the second part sometimes called matrix theory, and of numerical methods (interpolation, rounding errors, Newton's method, numerical integration, and solving linear systems with Gaussian elimination).

Literatur

There is no single textbook for the course. Possible references include:

- [1] E. Darve and M. Wootters, Numerical Linear Algebra with Julia, vol. 172, SIAM, 2021.
- [2] J. W. Demmel, Applied Numerical Linear Algebra, SIAM, 1997.
- [3] L. N. Trefethen and D. Bau, III., Numerical Linear Algebra, SIAM, Philadelphia, 1997.
- [4] D. S. Watkins, Fundamentals of Matrix Computations, vol. 64, John Wiley, 2004.

Leistungsnachweis

There will be an in personal oral exam at the end of the term, if regulations permit. To qualify for the exam you have to achieve at least 50% of the points in the homework assignments.

Lerninhalte

The following topics, among others, will be covered in this course:

- solving linear systems and least squares problems, also for large and sparse systems,
- eigenvalue problems,
- singular value decomposition,
- Kronecker products and matrix equations, and
- their applications and more.

Zielgruppe

This course is aimed for students interested in numerical computations. Numerical linear algebra is at the core of many numerical algorithms, including, among others, PDE solvers, neural networks, and optimization. It forms the heart of the mathematics of the 21st century.

Für Studierende Mathematik Lehramt empfehlen wir die Lehrveranstaltung Numerik II, welche sehr ähnliche Themen behandelt. Aus diesem Grund kann Numerical linear algebra nicht länger für Mathematik Bachelor of Science angeboten werden.

Leistungen in Bezug auf das Modul

PNL 551322 - Vorlesung und Übung (unbenotet)

**95120 S - Simulation of Stochastic Processes**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	Fr	14:15 - 15:45	wöch.	2.09.0.12	22.04.2022	Dr. Peter Keller

Kommentar

This seminar is about stochastic simulation, using different models and applications from probability, physics and biology as an opportunity to gain programming experience.

Bemerkung

Further information on Moodle:

<https://moodle2.uni-potsdam.de/course/view.php?id=32902>

Leistungen in Bezug auf das Modul

PNL 551322 - Vorlesung und Übung (unbenotet)

BM3 - Advanced Problem Solving Techniques

Für dieses Modul werden aktuell keine Lehrveranstaltungen angeboten

INF-DSAM1A - Advanced Machine Learning A

Für dieses Modul werden aktuell keine Lehrveranstaltungen angeboten

INF-DSAM1B - Advanced Machine Learning B

95295 P - Machine Learning on Spatio-Temporal Graphs

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Holger Giese

Kommentar

Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter <https://hpi.de/studium/lehrveranstaltungen.html>

Voraussetzung

Voraussetzungen werden in den Lehrinhaltsbeschreibungen unter <https://hpi.de/studium/lehrveranstaltungen.html> benannt

Bemerkung

Unter <https://hpi.de/studium/lehrveranstaltungen.html> sind folgende Angaben aufrufbar:

- Raum und Zeit
- Lehrinhalt und Leistungserfassung
- Teilnehmerbegrenzung

Leistungen in Bezug auf das Modul

PNL 557172 - Seminar (unbenotet)

95297 P - Multi-Agent Reinforcement Learning on Self-Adaptive Systems

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Holger Giese

Kommentar

Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter <https://hpi.de/studium/lehrveranstaltungen.html>

Voraussetzung

Voraussetzungen werden in den Lehrinhaltsbeschreibungen unter <https://hpi.de/studium/lehrveranstaltungen.html> benannt.

Bemerkung

Unter <https://hpi.de/studium/lehrveranstaltungen.html> sind folgende Angaben aufrufbar:

- Raum und Zeit
- Lehrinhalt und Leistungserfassung
- Teilnehmerbegrenzung

Leistungen in Bezug auf das Modul

PNL 557172 - Seminar (unbenotet)

 95364 VU - Deep Learning

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Christoph Lippert

Kommentar

Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter <https://hpi.de/studium/lehrveranstaltungen.html>

Voraussetzung

Voraussetzungen werden in den Lehrinhaltsbeschreibungen unter <https://hpi.de/studium/lehrveranstaltungen.html> benannt.

Bemerkung

Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter <https://hpi.de/studium/lehrveranstaltungen.html>

Leistungen in Bezug auf das Modul

PNL 557172 - Seminar (unbenotet)

 95423 S - Practical Applications of Deep Learning

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VP	N.N.	N.N.	wöch.	N.N.	N.N.	PD Dr. Haojin Yang

Leistungen in Bezug auf das Modul

PNL 557172 - Seminar (unbenotet)

INF-DSAM4A - Advanced Infrastructures and Software Engineering A **94136 VU - Principles of Data- and Knowledge-Base Systems**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
Alle	V	Fr	14:00 - 16:00	wöch.	2.25.F0.01	22.04.2022	Prof. Dr. Torsten Schaub
1	U	Di	16:00 - 18:00	wöch.	2.70.0.11	26.04.2022	Francois Laferriere
2	U	Do	16:00 - 18:00	wöch.	2.70.0.10	28.04.2022	Francois Laferriere

Kommentar

Moodle course: [moodle](#)

Literatur

Principles of Database & Knowledge-Base Systems by Jeffrey D. Ullman W. H. Freeman & Co. New York, NY, USA

Leistungen in Bezug auf das Modul

PNL 557181 - Vorlesung und Übung (unbenotet)

INF-DSAM4B - Advanced Infrastructures and Software Engineering B

Für dieses Modul werden aktuell keine Lehrveranstaltungen angeboten

INF-DSAM5A - Advanced Business Analytics A

Dieses Modul gilt, aufgrund einer Änderungssatzung, nur noch für Studierende, die das Modul vor dem 01.10.2022 begonnen haben. Das Modul läuft spätestens am 30.09.2024 aus.

95316 S - Social Media and Business Analytics Seminar							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	Fr	14:00 - 18:00	wöch.	3.06.S19	22.04.2022	Prof. Dr. Hanna Krasnova, Katharina Baum, Hannes-Vincent Krause

Kommentar

Dear students,

The **first session of this course will be on April, 22** where we will meet in **room 3.06.S19** to present the structure of the course, topics and to offer you the opportunity to ask questions.

In the course, we will strongly rely on **Moodle** where you can find more details on how the seminar will be organized and a description of the topics we will offer.

The details for the Moodle Course will be shared during the first session on April 22.

More details will follow soon. Stay tuned!

Please have in mind that the circumstances due to the COVID-19 pandemic are still highly unpredictable and the hygiene regulations at Uni Potsdam might be subject to change - so please keep yourself up to date. No matter what, we are dedicated to offering you a seminar which enables you to learn as much as possible. Thank you!

Literatur

- Collis, J., Hussey, R. (2013). Business research: A practical guide for undergraduate and postgraduate students. Palgrave Macmillan.
- DeVellis, R. F. Scale Development: Theory and Applications (Vol. 26), Sage Publications, 2011.
- Pedhazur, E. J., and Schmelkin, L. P. Measurement, Design, and Analysis: An Integrated Approach, Psychology Press, 2013.
- Recker J. Scientific Research in Information Systems: A Beginner's Guide, Springer, 2012.

Supplementary Readings: Additional articles and resources will be provided on a need-to basis via Moodle.

Leistungsnachweis

The course performance will be evaluated based on:

- Paper Slam Presentation (May, 6)
- Mid-Term Presentation (June, 3)
- Final Presentation (July, 22)
- Final Report (deadline: August, 30)

Lerninhalte

Social Media and in particular social networking sites have gained tremendous popularity in recent years (e.g. Facebook, Instagram, etc). Significant usage of such sites has recently shaped communication, information retrieval, and the entertainment culture of our society. Facebook alone has over 2.32 billion monthly active users. Against the background of this rapid development, our research investigates its long-term consequences on the society and the individual on behalf of various methodologies. Within this course, we would like to give you the chance to choose and apply one of these yourself within a project that you will work on during the semester.

This seminar/project focuses on conveying four important research methodologies:

- Systematic Literature Review
- Qualitative Data Analysis
- Quantitative Data Analysis
- Big Data Analysis

Students are encouraged to gain a deep understanding of a methodology of their choice, which may be applied within a chosen topic domain. Learning achievements will be presented and students are requested to write a seminar paper. The seminar will be held in English.

Leistungen in Bezug auf das Modul

PNL 557202 - Seminar 1 (unbenotet)

PNL 557203 - Seminar 2 (unbenotet)

95321 S - Social Media Research Seminar 2

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Hanna Krasnova

Leistungen in Bezug auf das Modul

PNL 557202 - Seminar 1 (unbenotet)

PNL 557203 - Seminar 2 (unbenotet)

95332 S - Digital Business and Consumer Behavior

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	Do	14:00 - 16:00	wöch.	3.06.H06	21.04.2022	Dr. Antonia Köster

Kommentar

Dear students,

The **first session of this course will be on April, 21** where we will meet in **room 3.06. H06** to present the structure of the course, topics and to offer you the opportunity to ask questions.

Please make sure to register before attending the first session!

In the course, we will strongly rely on **Moodle** where you can find more details on how the seminar will be organized and a description of the topics we will offer.

Please have in mind that the circumstances due to the COVID-19 pandemic are still highly unpredictable and the hygiene regulations at Uni Potsdam might be subject to change - so please keep yourself up to date. No matter what, we are dedicated to offering you a seminar which enables you to learn as much as possible. Thank you!

Leistungsnachweis

The course performance will be evaluated based on:

- Mid-Term Presentation (June, 2)
- Final Presentation (July, 21)
- Final Report (deadline: August, 30)

Leistungen in Bezug auf das Modul

PNL 557202 - Seminar 1 (unbenotet)

PNL 557203 - Seminar 2 (unbenotet)

95334 S - Social Network Analysis Seminar							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	Do	10:00 - 12:00	wöch.	3.06.H01	21.04.2022	Dr. Annika Baumann
Kommentar							
In our intertwined world, everyone and everything is connected with each other. A theory, commonly known as "Six Degrees of Separation" or "Small World Phenomenon", postulates that every human being in this world is connected to any other person through only very few others. An experiment performed by the psychologist Stanley Milgram in 1967 was able to show that this phenomenon seems to be true indeed. Nowadays, platforms such as Social Media do make it even easier to investigate the underlying social structures with large-scale datasets being readily available. However, networks do not only form the underlying basis in the case of Social Media platforms but they are almost everywhere we look. In the Seminar "Social Network Analysis" students will get to learn some basic underlying graph theory, work with scientific papers using networks to investigate research questions and work on a network-based project on their own. More information can be found on Moodle: Social Network Analysis (SoSe2022) - Moodle Course (enrolment key: SNA_SoSe2022)							
Voraussetzung							
None							
Students will be required within the seminar to create and analyze a (social) network on their own. Some basic programming skills are helpful but are not necessary as students can choose which tool(s) to use.							
Literatur							
Barabási, A. L. (2013). Network science. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 371(1987), 20120375.							
Leistungsnachweis							
Presentations & Seminar Paper							
Bemerkung							
Some sessions of the seminar might be held online. More information can be found later on Moodle. Please check later for more details.							
Leistungen in Bezug auf das Modul							
PNL	557202 - Seminar 1 (unbenotet)						
PNL	557203 - Seminar 2 (unbenotet)						

INF-DSAM5B - Advanced Business Analytics B

95316 S - Social Media and Business Analytics Seminar							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	Fr	14:00 - 18:00	wöch.	3.06.S19	22.04.2022	Prof. Dr. Hanna Krasnova, Katharina Baum, Hannes-Vincent Krause

Kommentar

Dear students,

The **first session of this course will be on April, 22** where we will meet in **room 3.06.S19** to present the structure of the course, topics and to offer you the opportunity to ask questions.

In the course, we will strongly rely on **Moodle** where you can find more details on how the seminar will be organized and a description of the topics we will offer.

The details for the Moodle Course will be shared during the first session on April 22.

More details will follow soon. Stay tuned!

Please have in mind that the circumstances due to the COVID-19 pandemic are still highly unpredictable and the hygiene regulations at Uni Potsdam might be subject to change - so please keep yourself up to date. No matter what, we are dedicated to offering you a seminar which enables you to learn as much as possible. Thank you!

Literatur

- Collis, J., Hussey, R. (2013). Business research: A practical guide for undergraduate and postgraduate students. Palgrave Macmillan.
- DeVellis, R. F. Scale Development: Theory and Applications (Vol. 26), Sage Publications, 2011.
- Pedhazur, E. J., and Schmelkin, L. P. Measurement, Design, and Analysis: An Integrated Approach, Psychology Press, 2013.
- Recker J. Scientific Research in Information Systems: A Beginner's Guide, Springer, 2012.

Supplementary Readings: Additional articles and resources will be provided on a need-to basis via Moodle.

Leistungsnachweis

The course performance will be evaluated based on:

- Paper Slam Presentation (May, 6)
- Mid-Term Presentation (June, 3)
- Final Presentation (July, 22)
- Final Report (deadline: August, 30)

Lerninhalte

Social Media and in particular social networking sites have gained tremendous popularity in recent years (e.g. Facebook, Instagram, etc). Significant usage of such sites has recently shaped communication, information retrieval, and the entertainment culture of our society. Facebook alone has over 2.32 billion monthly active users. Against the background of this rapid development, our research investigates its long-term consequences on the society and the individual on behalf of various methodologies. Within this course, we would like to give you the chance to choose and apply one of these yourself within a project that you will work on during the semester.

This seminar/project focuses on conveying four important research methodologies:

- Systematic Literature Review
- Qualitative Data Analysis
- Quantitative Data Analysis
- Big Data Analysis

Students are encouraged to gain a deep understanding of a methodology of their choice, which may be applied within a chosen topic domain. Learning achievements will be presented and students are requested to write a seminar paper. The seminar will be held in English.

Leistungen in Bezug auf das Modul

SL 557211 - Individuelles Forschungsprojekt (unbenotet)

SL 557212 - Seminar (unbenotet)

 95332 S - Digital Business and Consumer Behavior

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	Do	14:00 - 16:00	wöch.	3.06.H06	21.04.2022	Dr. Antonia Köster

Kommentar

Dear students,

The **first session of this course will be on April, 21** where we will meet in **room 3.06. H06** to present the structure of the course, topics and to offer you the opportunity to ask questions.

Please make sure to register before attending the first session!

In the course, we will strongly rely on **Moodle** where you can find more details on how the seminar will be organized and a description of the topics we will offer.

Please have in mind that the circumstances due to the COVID-19 pandemic are still highly unpredictable and the hygiene regulations at Uni Potsdam might be subject to change - so please keep yourself up to date. No matter what, we are dedicated to offering you a seminar which enables you to learn as much as possible. Thank you!

Leistungsnachweis

The course performance will be evaluated based on:

- Mid-Term Presentation (June, 2)
- Final Presentation (July, 21)
- Final Report (deadline: August, 30)

Leistungen in Bezug auf das Modul

SL 557212 - Seminar (unbenotet)

 95334 S - Social Network Analysis Seminar

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	Do	10:00 - 12:00	wöch.	3.06.H01	21.04.2022	Dr. Annika Baumann

Kommentar

In our intertwined world, everyone and everything is connected with each other. A theory, commonly known as "Six Degrees of Separation" or "Small World Phenomenon", postulates that every human being in this world is connected to any other person through only very few others. An experiment performed by the psychologist Stanley Milgram in 1967 was able to show that this phenomenon seems to be true indeed. Nowadays, platforms such as Social Media do make it even easier to investigate the underlying social structures with large-scale datasets being readily available. However, networks do not only form the underlying basis in the case of Social Media platforms but they are almost everywhere we look.

In the **Seminar "Social Network Analysis"** students will get to learn some basic underlying graph theory, work with scientific papers using networks to investigate research questions and work on a network-based project on their own.

More information can be found on Moodle: [Social Network Analysis \(SoSe2022\) - Moodle Course](#) (enrolment key: SNA_SoSe2022)

Voraussetzung

None

Students will be required within the seminar to create and analyze a (social) network on their own. Some basic programming skills are helpful but are not necessary as students can choose which tool(s) to use.

Literatur	
Barabási, A. L. (2013). Network science. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, 371(1987), 20120375.	
Leistungsnachweis	
Presentations & Seminar Paper	
Bemerkung	
Some sessions of the seminar might be held online. More information can be found later on Moodle. Please check later for more details.	
Leistungen in Bezug auf das Modul	
SL	557212 - Seminar (unbenotet)

95362 V - Business Process Intelligence							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Mathias Weske
Raum und Zeit nach Absprache							
Kommentar							
Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter https://hpi.de/studium/lehveranstaltungen.html							
Voraussetzung							
Voraussetzungen werden in den Lehrinhaltsbeschreibungen unter https://hpi.de/studium/lehveranstaltungen.html benannt.							
Bemerkung							
Unter https://hpi.de/studium/lehveranstaltungen.html sind folgende Angaben aufrufbar:							
• Raum und Zeit • Lehrinhalt und Leistungserfassung • Teilnehmerbegrenzung							
Leistungen in Bezug auf das Modul							
SL	557211 - Individuelles Forschungsprojekt (unbenotet)						

95402 S2 - Advanced Techniques for Analysis and Visualization of Software Data							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Jürgen Döllner
Leistungen in Bezug auf das Modul							
SL	557211 - Individuelles Forschungsprojekt (unbenotet)						

95403 S2 - State-of-the-Art Visual Media Analysis and Processing							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Dr. Matthias Trapp
Leistungen in Bezug auf das Modul							
SL	557211 - Individuelles Forschungsprojekt (unbenotet)						

INF-DSAM6A - Advanced Applied Data Science A							
93972 VS - Dryland water resources							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VS	Do	10:15 - 11:45	wöch.	2.05.1.08	21.04.2022	Prof. Dr. Axel Bronstert, Prof. Dr. Sascha Oswald

Leistungen in Bezug auf das Modul

SL 557221 - Vorlesung / Seminar / Übung / Projekt (unbenotet)

 93990 VU - Irrigation and Agricultural Hydrology

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VU	Do	12:15 - 13:45	wöch.	2.05.1.08	21.04.2022	Nahed Ben Salem

Leistungen in Bezug auf das Modul

SL 557222 - Vorlesung / Seminar / Übung / Projekt (unbenotet)

INF-DSAM6B - Advanced Applied Data Science B **93990 VU - Irrigation and Agricultural Hydrology**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VU	Do	12:15 - 13:45	wöch.	2.05.1.08	21.04.2022	Nahed Ben Salem

Leistungen in Bezug auf das Modul

SL 557231 - Vorlesung / Seminar / Übung / Projekt (unbenotet)

 95031 VU - Theoretical Systems Biology

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	U	Mo	14:15 - 15:45	wöch.	2.05.1.06	18.04.2022	Anahita Samih
1	V	Mi	08:15 - 09:45	wöch.	2.05.1.06	20.04.2022	Dr. Niklas Hartung

Kommentar

NOTE: The first lecture (April 20th) will be delivered online via Zoom. Please subscribe to the Moodle course page (--> [LINK](#)) for login information. Thereafter, all lectures/exercises will take place on-site.

Leistungen in Bezug auf das Modul

SL 557231 - Vorlesung / Seminar / Übung / Projekt (unbenotet)

 95297 P - Multi-Agent Reinforcement Learning on Self-Adaptive Systems

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Holger Giese

Kommentar

Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter <https://hpi.de/studium/lehrveranstaltungen.html>

Voraussetzung

Voraussetzungen werden in den Lehrinhaltsbeschreibungen unter <https://hpi.de/studium/lehrveranstaltungen.html> benannt.

Bemerkung

Unter <https://hpi.de/studium/lehrveranstaltungen.html> sind folgende Angaben aufrufbar:

- Raum und Zeit
- Lehrinhalt und Leistungserfassung
- Teilnehmerbegrenzung

Leistungen in Bezug auf das Modul

SL 557231 - Vorlesung / Seminar / Übung / Projekt (unbenotet)

 95302 VU - Image & Video Processing - Concepts and Techniques

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	N.N.	N.N.	wöch.	N.N.	N.N.	Dr. Matthias Trapp

Kommentar	
Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter https://hpi.de/studium/lehveranstaltungen.html	
Voraussetzung	
Voraussetzungen werden in den Lehrinhaltsbeschreibungen unter https://hpi.de/studium/lehveranstaltungen.html benannt.	
Bemerkung	
Unter https://hpi.de/studium/lehveranstaltungen.html sind folgende Angaben aufrufbar: • Raum und Zeit • Lehrinhalt und Leistungserfassung • Teilnehmerbegrenzung	
Leistungen in Bezug auf das Modul	
SL	557231 - Vorlesung / Seminar / Übung / Projekt (unbenotet)

95360 S - Applied Machine Learning in Digital Health							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VP	N.N.	N.N.	wöch.	N.N.	N.N.	Dr.-Ing. Matthieu-Patrick Schapranow
Kommentar							
Angaben zum Lehrinhalt in der Beschreibung aufrufbar unter https://hpi.de/studium/lehveranstaltungen.html							
Voraussetzung							
Voraussetzungen werden in den Lehrinhaltsbeschreibungen unter https://hpi.de/studium/lehveranstaltungen.html benannt.							
Bemerkung							
Unter https://hpi.de/studium/lehveranstaltungen.html sind folgende Angaben aufrufbar: • Raum und Zeit • Lehrinhalt und Leistungserfassung • Teilnehmerbegrenzung							
Leistungen in Bezug auf das Modul							
SL	557231 - Vorlesung / Seminar / Übung / Projekt (unbenotet)						

95423 S - Practical Applications of Deep Learning							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VP	N.N.	N.N.	wöch.	N.N.	N.N.	PD Dr. Haojin Yang
Leistungen in Bezug auf das Modul							
SL	557231 - Vorlesung / Seminar / Übung / Projekt (unbenotet)						

INF-DSAM7 - Computer Engineering for Big Data							
94067 VU - Verteilte Systeme							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	Di	12:00 - 14:00	wöch.	2.70.0.11	19.04.2022	Prof. Dr. Bettina Schnor
1	U	Mi	12:00 - 14:00	wöch.	2.70.0.09	20.04.2022	Prof. Dr. Bettina Schnor, Petra Vogel

Kommentar

Die Vorlesung gibt eine Einführung in die Konzepte verteilter Systeme. Themengebiete sind u.a. Kommunikation (RPC, Publish/Subscribe, Multicast, REST) in Verteilten Systemen, verteilte Dateisysteme, Synchronisationstechniken für verteilte Anwendungen und Lastverteilung (Webserver, Cloud Computing).

Für weitere Informationen siehe auch die Webseite <https://www.cs.uni-potsdam.de/bs/teaching/docs/courses/>

Start der Veranstaltung ist in der zweiten Vorlesungswoche: Vorlesung am 26.4.22, Übung am 27.4.22!

Voraussetzung

Grundlagen Betriebssysteme und Rechnernetze

Leistungsnachweis

Hat man mindestens 50% der Hausaufgabenpunkte erreicht, wird man zur Klausur zugelassen.

Bemerkung

Mit Beginn der Einschreibefrist in PULS ist auch die Einschreibung zum zugehörigen Moodle-Kurs "Verteilte Systeme" über diesen Link möglich und erforderlich: <https://moodle2.uni-potsdam.de/course/view.php?id=32996> **Achtung! Erst ab 19.4.2022!**

Leistungen in Bezug auf das Modul

PNL 557242 - Übung oder Projekt (unbenotet)

94077 VU - Hardware-Architekturen für KI-Anwendungen							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	V	Fr	12:00 - 14:00	wöch.	2.70.0.09	22.04.2022	Prof. Dr. Milos Krstic
1	U	Fr	14:00 - 16:00	wöch.	2.70.0.09	22.04.2022	Junchao Chen, Prof. Dr. Milos Krstic, Anselm Breitenreiter

Kommentar

Introductory lecture is on Friday 22.4. at 12:30.

Further information will follow in the next days.

Leistungsnachweis

Mündliche Prüfung.

Lerninhalte

In this course the focus will be on the specifics of hardware design and architectures for AI applications. After the overview of the standard design techniques and common computing architectures, the additional requirements of AI will be discussed. Based on this, the specific architectures and design methods increasing the efficiency of the computation will be discussed. Finally, this course will include also an introduction to the emerging and novel architectures and technologies that could have significant impact in the future.

Here is the detailed list of topics:

- Introduction in VLSI design and computer architectures
- State of the art processor architecture, Example RISC-V
- Limitations of classical architectures for AI applications
- Accelerators architectures: GPUs, MAC arrays
- Neuromorphic Architectures (TrueNorth, Loihi, Spinnaker), asynchronous design
- Emerging architectures: In-Memory-Computing (example RRAM)

Leistungen in Bezug auf das Modul

PNL 557242 - Übung oder Projekt (unbenotet)

INF-DSAM9 - Computational Foundations of Data Science **94125 DF - Multi-agent path finding**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	VU	Mo	14:00 - 16:00	wöch.	2.70.0.08	25.04.2022	Prof. Dr. Torsten Schaub, Etienne Tignon

Kommentar

Multi-agent path finding is the name of the problem of planning path of a multitude of agents. The goal is trying to avoid collisions between the agents while trying to optimize the paths. In this lecture, the students will read relevant paper on the subject, write summary about them and participate in a practical project.

There is the link to the moodle page.

The password is mapf29138mcp

Leistungen in Bezug auf das Modul

PNL 557251 - Vorlesung und Übung (unbenotet)

INF-DSAM10 - Research Data Management, Law, and Ethics **94131 VU - Forschungsdatenmanagement**

Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
Alle	V	Mo	16:00 - 18:00	wöch.	2.70.0.09	25.04.2022	Prof. Dr.-Ing. Ulrike Lucke
1	U	Mi	10:00 - 12:00	wöch.	2.70.0.09	27.04.2022	Axel Wiepke
2	U	Mi	12:00 - 14:00	wöch.	2.70.0.08	27.04.2022	Axel Wiepke

Kommentar

Die Naturwissenschaften gehören zu den größten Datenproduzenten; innovative technische und organisatorische Lösungen zur Speicherung und Verarbeitung großer Datenmengen in verteilten IT-Systemen sind daher unabdingbar. In dem Modul werden Themen behandelt wie:

- Grundlagen von Datenmanagement
- Open Access, Open Data und Open Science
- Forschungsdatenmanagement
- Speicherinfrastrukturen und -technologien
- ethische und rechtliche Aspekte
- nationale und internationale Initiativen

Begleitend werden Exkursionen zu ausgewählten Infrastrukturen an der Universität Potsdam angeboten.

The sciences are among the largest producers of data; innovative technical and organizational solutions for storing and processing large amounts of data in distributed IT systems are therefore essential. The module will cover topics such as:

- Fundamentals of Data Management
- Open Access, Open Data and Open Science
- Research data management
- Storage infrastructures and technologies
- Ethical and legal aspects
- National and international initiatives

Accompanying excursions to selected infrastructures at the University of Potsdam are offered.

Voraussetzung

Grundkenntnisse von Rechnernetzen

basic knowledge on computer networks

Leistungsnachweis

Die Leistungserfassung besteht aus insgesamt drei Komponenten:

- 1) erfolgreiche Bearbeitung von Übungsaufgaben, nachgewiesen durch Abgabe von mindestens 80% der Aufgabenblätter und Erreichen von mindestens 50% der Punkte
- 2) individuelle Erarbeitung eines Forschungsdatenmanagementplans, nachgewiesen durch Abgabe einer Projektbeschreibung, zwei Zwischenversionen des Plans und Peer-Feedback
- 3) Abgabe eines Forschungsdatenmanagementplans zu einem selbst gewählten Projekt

Dabei sind 1. und 2. Voraussetzungen für die Zulassung zur Modulprüfung, und die Modulnote für diesen Kurs ergibt sich aus 3.

Assessment in this course consists of three components:

- 1) successful completion of exercises, proven by handing in at least 80% of the exercise sheets and achieving at least 50% of the points
- 2) individual development of a research data management plan, evidenced by submission of a project description, two intermediate versions of the plan and peer feedback
- 3) submission of a research data management plan for a self-chosen project

Here, 1. and 2. are prerequisites for the admission to the module examination, and the module grade for this course results from 3.

Bemerkung

Depending on the participants, the course language will be English or German.

Leistungen in Bezug auf das Modul

PNL 557262 - Übung oder Projekt (unbenotet)

95501 S2 - Methods in Human-Computer Interaction							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	S	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Tobias Scheffer
1	PJ	N.N.	N.N.	wöch.	N.N.	N.N.	Prof. Dr. Tobias Scheffer
Leistungen in Bezug auf das Modul							
PNL 557262 - Übung oder Projekt (unbenotet)							

INF-DSAM11 - Applied Data Science Internship

93699 PJ - Solver Construction							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	Mo	12:00 - 14:00	wöch.	2.70.0.10	25.04.2022	Javier Romero Davila, Francois Laferriere, Prof. Dr. Torsten Schaub, Etienne Tignon

Nach Absprache

Kommentar

In this project, student teams build their own problem solvers (or components thereof) based on modern constraint technology. Foremost this concerns ASP solving technology but equally well that of SAT, PB and related areas.

Voraussetzung							
Good knowledge in ASP and/or SAT technology and python and/or C++							
Literatur							
- Answer Set Solving in Practice by Martin Gebser, Roland Kaminski, Benjamin Kaufmann, and Torsten Schaub - Synthesis Lectures on Artificial Intelligence and Machine Learning, Morgan and Claypool							
Leistungsnachweis							
Implementation, evaluation, presentation, and documentation							
Bemerkung							
Offline communication is conducted primarily via the associated moodle page. Announcements are also made through the email list of registered students in puls. Questions can be address to krprojects@lists.cs.uni-potsdam.de .							
Lerninhalte							
On individual basis							
Kurzkommentar							
Joint kick-off event for all projects of the professorship Knowledge Processing and Information Systems as announced in course catalog of the department and the associated moodle page moodle							
Zielgruppe							
Students interested in high-end programming							
Leistungen in Bezug auf das Modul							
SL	557271 - Praktikum (mind. 8 Wochen) (unbenotet)						
 94215 PJ - Declarative Problem Solving							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	Mo	12:00 - 14:00	wöch.	2.70.0.10	25.04.2022	Francois Laferriere, Javier Romero Davila, Prof. Dr. Torsten Schaub
Nach Absprache							
Kommentar							
In this project, student teams build software systems whose core consists of problem solvers for combinatorial (optimization) problems, like answer set programming							
Voraussetzung							
Good knowledge in ASP and/or SAT.							
Leistungsnachweis							
Implementation, evaluation, presentation, and documentation							

Bemerkung							
Offline communication is conducted primarily via the associated moodle page. Announcements are also made through the email list of registered students in puls. Questions can be address to krprojects@lists.cs.uni-potsdam.de. krprojects@lists.cs.uni-potsdam.de							
Lerninhalte							
On individual basis							
Kurzkommentar							
Joint kick-off event for all projects of the professorship Knowledge Processing and Information Systems as announced in course catalogue of the department and the associated moodle page moodle							
Zielgruppe							
MSc students who want to deepen their practical knowledge in declarative modelling techniques and their application							
Leistungen in Bezug auf das Modul							
SL	557271 - Praktikum (mind. 8 Wochen) (unbenotet)						
94234 PJ - Intelligent Logistics Technology							
Gruppe	Art	Tag	Zeit	Rhythmus	Veranstaltungsort	1.Termin	Lehrkraft
1	PJ	Mo	12:00 - 14:00	wöch.	2.70.0.10	25.04.2022	Prof. Dr. Torsten Schaub, Javier Romero Davila, Francois Laferriere, Etienne Tignon
Nach Absprache							
Kommentar							
In this project, student teams build software systems addressing problems in warehouse logistics using problem solvers for answer set programming							
Voraussetzung							
Knowledge in answer set programming (and python).							
Leistungsnachweis							
Implementation, evaluation, presentation, and documentation.							
Bemerkung							
Offline communication is conducted primarily via the associated moodle page. Announcements are also made through the email list of registered students in puls. Questions can be address to krprojects@lists.cs.uni-potsdam.de .							
Lerninhalte							
On individual basis.							

Kurzkommentar

Joint kick-off event for all projects of the professorship Knowledge Processing and Information Systems as announced in course catalog of the department and the associated moodle page.
[moodle](#)

Zielgruppe

Students interested in applying AI-techniques in logistics

Leistungen in Bezug auf das Modul

SL 557271 - Praktikum (mind. 8 Wochen) (unbenotet)

Glossar

Die folgenden Begriffserklärungen zu Prüfungsleistung, Prüfungsnebenleistung und Studienleistung gelten im Bezug auf Lehrveranstaltungen für alle Ordnungen, die seit dem WiSe 2013/14 in Kraft getreten sind.

Prüfungsleistung	Prüfungsleistungen sind benotete Leistungen innerhalb eines Moduls. Aus der Benotung der Prüfungsleistung(en) bildet sich die Modulnote, die in die Gesamtnote des Studiengangs eingeht. Handelt es sich um eine unbenotete Prüfungsleistung, so muss dieses ausdrücklich („unbenotet“) in der Modulbeschreibung der fachspezifischen Ordnung geregelt sein. Weitere Informationen, auch zu den Anmeldeöglichkeiten von Prüfungsleistungen, finden Sie unter anderem in der Kommentierung der BaMa-O
Prüfungsnebenleistung	Prüfungsnebenleistungen sind für den Abschluss eines Moduls relevante Leistungen, die – soweit sie vorgesehen sind – in der Modulbeschreibung der fachspezifischen Ordnung beschrieben sind. Prüfungsnebenleistungen sind immer unbenotet und werden lediglich mit "bestanden" bzw. "nicht bestanden" bewertet. Die Modulbeschreibung regelt, ob die Prüfungsnebenleistung eine Teilnahmevoraussetzung für eine Modulprüfung oder eine Abschlussvoraussetzung für ein ganzes Modul ist. Als Teilnahmevoraussetzung für eine Modulprüfung muss die Prüfungsnebenleistung erfolgreich vor der Anmeldung bzw. Teilnahme an der Modulprüfung erbracht worden sein. Auch für Erbringung einer Prüfungsnebenleistungen wird eine Anmeldung vorausgesetzt. Diese fällt immer mit der Belegung der Lehrveranstaltung zusammen, da Prüfungsnebenleistung im Rahmen einer Lehrveranstaltungen absolviert werden. Sieht also Ihre fachspezifische Ordnung Prüfungsnebenleistungen bei Lehrveranstaltungen vor, sind diese Lehrveranstaltungen zwingend zu belegen, um die Prüfungsnebenleistung absolvieren zu können.
Studienleistung	Als Studienleistung werden Leistungen bezeichnet, die weder Prüfungsleistungen noch Prüfungsnebenleistungen sind.



Quelle: Karla Pirze

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