



Modulkatalog

Computational Linguistics and Language Technology

Programmformat: Major 90

Studienstufe: Master

Gültig ab: Herbstsemester 2019

[Erstellt am 01.04.2019]

Modulgruppen des Programms

Scientific Specialization

Core Modules of Computational Linguistics and Language Technology

Computer Science

Computational Linguistics and Language Technology in Practice

Other Curricular Modules

Der Modulkatalog enthält sämtliche beständigen Angaben zu den Pflicht- und Wahlpflichtmodulen des Programms. Die semesterbezogenen Informationen finden Sie jeweils aktuell im Vorlesungsverzeichnis.

Es werden nicht alle Wahlmodule im Modulkatalog dargestellt, und wenn, dann lediglich als Schablonen, die in der Semesterplanung konkretisiert werden. Alle Informationen zu Wahlmodulen finden Sie jeweils im aktuellen Vorlesungsverzeichnis.



Master Thesis

06SM521-MA

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 30

Angebotsmuster 2-semesterig, jedes Semester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis schriftliche Arbeit

Unterrichtssprache Englisch

Lehrformen Ma-Arbeit

Lernziel

The students: - are able to cope with a research question in a scientific concise way; - are able to deal with the relevant research literature; - use existing language technology or improve existing methods; - specify und implement their own problem specific algorithm; - evaluate their systems according to the standards of our discipline; - concisely describe their work in their Master's thesis.

Allgemeine Beschreibung

The "state of the art" is to be reprocessed in relation to the chosen question and the formal rules of the discipline (e.g. regarding references) must be taken into account. For more information please consult the home page of the Institute of Computational Linguistics.

Voraussetzungen

Erfolgreiche Absolvierung von 30% der geforderten Module.



[Seminar]

06SM521-s09

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, einmalig

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit keine Wiederholungsmöglichkeit

Leistungsnachweis schriftliche Arbeit und Referat

Unterrichtssprache

Lehrformen Seminar

Lernziel

The students: - gain further insight in a specific area of Natural Language Processing; - acquire basic methodological skills needed for scientific research; - get practice in presenting complex topics in a clear manner; - can write a scientific paper.

Allgemeine Beschreibung

A seminar serves the scientific deepening of knowledge in a particular subject area. Students learn the methods of scientific work, e.g. how to deal with research literature, how to interpret facts and theories as well as to properly evaluate empirical results. Moreover, they learn how to prepare and give a talk. Students learn how to discuss and evaluate other talks. Finally, they acquire the skill to elaborate their talk in a written format.

Voraussetzungen

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Advanced Techniques of Machine Translation

06SM521-501

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Herbstsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio (75% Schriftliche Prüfung und 25% Nachweis von im Selbststudium erbrachten Studienleistungen)

Unterrichtssprache Englisch

Lehrformen Vorlesung mit integrierter Übung

Lernziel

The students: - will be acquainted with the latest research and developments in Machine Translation; - will learn how to build Machine Translation systems with state-of-the-art performance; - will learn how to perform Machine Translation experiments and publish the results.

Allgemeine Beschreibung

In this course we present and experience the latest research in Machine Translation. Topics include building and evaluating Machine Translation systems, and integrating the systems into various application scenarios. We take a broad perspective and look at Machine Translation for different language situations (written, spoken, and signed language). And we take a deep perspective by studying the underlying linguistic knowledge sources and statistical techniques in detail.

Voraussetzungen

Basic knowledge in Machine Translation.

Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Advanced Techniques of Text Mining

06SM521-502

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes 2. Frühlingssemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio (60% schriftliche Prüfung und 40% Nachweis von im Selbststudium erbrachten Studienleistungen)

Unterrichtssprache Englisch

Lehrformen Vorlesung mit integrierter Übung

Lernziel

The students: - explore the research fields which are commonly known as Information Retrieval (IR), Information Extraction (IE) and Text Mining (TM); - gain knowledge in terminology management, entity recognition, information extraction, and the various levels of Natural Language processing which are required in order to perform advanced Text Mining.

Allgemeine Beschreibung

Text Mining is often described as the discovery by computer of new, previously unknown information, by automatically extracting information from different written resources. In this course we aim at providing students with in-depth knowledge of information extraction techniques and specific text mining applications, with a special focus on the biomedical domain. We will investigate the importance of domain entities and terminology, the potential role of domain ontologies, as well as present a range of NLP techniques that can be applied to the problems of Text Mining.

Voraussetzungen

Knowledge of at least one programming language. Familiarity with the Unix environment.

Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Dialog Systems

06SM521-503

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes 2. Herbstsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis schriftliche Prüfung

Unterrichtssprache Englisch

Lehrformen Vorlesung mit integrierter Übung

Lernziel

The students: - know the principles, architectures and components of digital personal assistants, chatbots, artificial companions and other conversational agents; - acquire theoretical knowledge about dialog and conversation.

Allgemeine Beschreibung

Dialog systems are becoming part of our daily lives. In this course, we focus on the theory and technology behind such conversational agents. We discuss the principles of dialog management, the overall architecture of dialog systems and how the performance of these systems can be evaluated.

Voraussetzungen

Programming skills and a solid understanding of machine learning algorithms.

Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Discourse Analysis

06SM521-504

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes 2. Herbstsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis schriftliche Arbeit

Unterrichtssprache Englisch

Lehrformen Vorlesung mit integrierter Übung

Lernziel

The students: - understand the particular problems related to discourse; - know about the theories, techniques and methods meant to solve these problems.

Allgemeine Beschreibung

Discourse analysis focusses on text structure. Quite a number of approaches like coreference resolution, bridging, discourse parsing and argumentation mining have been developed in order to capture the central notion of coherence. In this course, discourse theories and their ingredients like dialogue acts and coherence relations are introduced. We also have a look at applications and systems.

Voraussetzungen

Programming skills and a solid understanding of machine learning algorithms.

Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Machine Learning for Natural Language Processing 1

06SM521-505

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Herbstsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio (75% schriftliche Prüfung und 25% Nachweis von im Selbststudium erbrachten Studienleistungen)

Unterrichtssprache Englisch

Lehrformen Vorlesung mit integrierter Übung

Lernziel

The students: - know about relevant machine learning techniques in NLP; - understand advanced concepts for semisupervised learning and linguistic structure prediction; - gain practical experience in applying machine learning to NLP problems.

Allgemeine Beschreibung

Modern Natural Language Processing (NLP) requires a lot of expertise in machine learning techniques. This course first introduces the basic supervised and unsupervised methods used in NLP: regression, classification, sequence labeling, clustering, topic modeling, dimension reduction. The second part has a focus on linguistic structure prediction and semisupervised approaches. The participants gain theoretical and practical experience in this course.

Voraussetzungen

Programming skills in Python and basic knowledge in statistics and probability theory.

Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Machine Learning for Natural Language Processing 2

06SM521-506

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Frühlingsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Nachweis von im Selbststudium erbrachten Studienleistungen

Unterrichtssprache Englisch

Lehrformen Vorlesung mit integrierter Übung

Lernziel

The students: - know current state-of-the-art machine learning methods for different NLP tasks; - know how to conduct current machine-learning-based empirical research in NLP.

Allgemeine Beschreibung

This course has a focus on current neural machine learning (ML) methods that achieve state-of-the-art performance on Natural Language Processing (NLP) tasks. The participants study and present recent research articles from the NLP literature. As a practical preparation for a modern empirical master's thesis, they learn how to plan, conduct and evaluate ML-based NLP experiments and how to describe their approach and results in a scientific paper.

Voraussetzungen

Successfully completed module «Machine Learning for Natural Language Processing I».

Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Fundamentals of speech sciences and signal processing

06SM521-519

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Frühlingsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio: (a) 6 written assignments throughout the term (60%) (b) written exam (40%)

Unterrichtssprache Englisch

Lehrformen Vorlesung

Lernziel

(a) Fundamental skills in speech signal processing (b) Understanding of speech acoustics like signal types, signal transformations, acoustic systems and signal and system analysis (c) Application of the signal processing techniques in research and industrial products.

Allgemeine Beschreibung

In research and in numerous practical applications, the processing of speech signals (e.g. recoding, manipulating, replaying) is fundamental. In this lecture series we will acquire a fundamental understanding of signal and system theory that is necessary for understanding speech communication in humans and the processing of speech in numerous technical applications.

Voraussetzungen

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Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Instrumental techniques of phonetic research

06SM521-520

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Frühlingssemester

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio: At the beginning of the semester students create a pool of their own recordings. During the semester they run guided analyses on their material both as part of the course but also as personal homework. In addition students are required to hand in a small-scale empiric study (7-10 pages) using their recordings and/or additional recordings from other sources to be handed in at the last meeting of the semester. Both their analyses during the semester and their final report form their portfolio and thus the basis for the evaluation of their performance.

Unterrichtssprache Englisch

Lehrformen Übung

Lernziel

Students know how to make high-quality audio recordings for phonetic research purposes. They can annotate sound files, make reliable measurements in them (formants, pitch, intensity, etc.) and produce meaningful visualizations (wave forms, spectra, spectrograms, etc.) with suitable software. They also understand how to read spectrograms so as to draw informed conclusions about the temporal and spectral characteristics of speech events. Moreover, students understand the most important key notions and concepts in automatizing measurements and in making them replicable (scripting).

Allgemeine Beschreibung

Since speech is a transient event, phoneticians regularly resort to the aid of technical devices in order to record, describe and analyse the production, the acoustics and the perception of speech sounds. Hence, in this module we look at the technical side of phonetic research and the students acquire and develop skills and techniques necessary for the successful deployment of such devices, ranging from sound recording equipment (especially recorders and microphones) to more specialized phonetic equipment (such as the laryngograph) to software solutions geared specifically towards the need of phoneticians (such as Praat or the R-package 'vowels').

Voraussetzungen

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Dieses Modul ist als vorgezogenes Mastermodul geeignet.



Phonetic Transcription

06SM521-521

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Herbstsemester

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio (Students upload solutions of different exercises of phonetic transcription to the platform OLAT).

Unterrichtssprache Englisch

Lehrformen Übung

Lernziel

Students are familiar with the different alphabets used for phonetic transcription (ranging from Boehmer-Ascoli to X-SAMPA), gaining a thorough knowledge of the International Phonetic Alphabet (IPA). They are aware of the theoretical and methodological aspects involved in phonetic transcription and are able to use the necessary practical tools (e.g., fonts, computer software, etc.) in an adequate manner.

Allgemeine Beschreibung

This tutorial offers a historical overview of phonetic transcription from the foundations in the nineteenth century (i.e. the creation of the dialectological transcription systems and the introduction of the IPA in 1886) to the novel tools used in the field of speech technology (e.g. the X-SAMPA-Alphabet). The practical exercises focus on different types of transcription (broad/narrow, phonemic/phonetic, systematic/impressionistic), on the basis of both written texts and audio recordings and illustrating better and lesser known languages. The technical tools consist in particular of phonetic fonts (including shortcuts and the "IPA-Palette") and the use of acoustic software for manual and automatic segmentation/annotation of audio recordings. An outlook on some non-phonetic procedures of annotating spoken language (e.g. in the field of conversation analysis or working with video recordings) will round off the tutorial.

Voraussetzungen

The participation in "The Sounds of the World's Languages" is highly recommended.

Dieses Modul ist als vorgezogenes Mastermodul geeignet.



[Summer School]

06SM521-s06

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, einmalig

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit keine Wiederholungsmöglichkeit

Leistungsnachweis Nachweis von im Selbststudium erbrachten Studienleistungen

Unterrichtssprache

Lehrformen Selbststudium

Lernziel

Learning objectives are: - repeat and consolidate what you have learned - acquire new content / topic areas in a compact form - get to know the latest trends - exchange of experiences with students from other universities - networking at international level.

Allgemeine Beschreibung

Summer schools are designed to give students an in-depth insight into specific subject areas. This way, they consolidate what they have learned so far during their studies, expand their knowledge of core theories and understand new approaches in a compact way. They become aware of current trends, they exchange experiences and assessments with students from other universities, and thus get the opportunity to get to know the international level and at the same time establish relationships that can be helpful beyond their studies. This module can be booked to credit the attendance at summer schools that are related to Natural Language Processing. This module can be booked with 3 or 6 ECTS points. The amount of points will be decided in consultation with the module coordinator.

Voraussetzungen

This module can not be booked by the students themselves, the booking has to be authorized by the module coordinator. In order to credit the attendance at a summer school, it is essential to submit a request to the module coordinator before the start of the summer school.



Computer Graphics Lab

BINFP601

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Computer Graphics

BMINF002

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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CSCW

BMINF003

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Software Maintenance and Evolution

BMINF005

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Temporal and Spatial Data Management

BMINF008

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Economics and Computation

BMINF015

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Human Computer Interaction

BMINF016

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Mobile Communication Systems

BMINF017

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Vision Algorithms for Mobile Robotics

BMINF020

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Information Management

MINF4200

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Protocols for Multi-media Communications (PMMK)

MINF4209

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Blockchains and Overlay Networks

MINF4224

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Digitalization and Sustainable Development

MINF4519

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Practical Artificial Intelligence

MINF4529

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Human Aspects of Software Engineering

MINF4532

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Advanced Software Engineering

MINF4534

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Big-Data Analytics

MINF4538

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Quantitative Methods in Human-Computer Interaction

MINF4547

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Applied Analytical Data Science

MINF4550

Anbietende Organisationseinheit

WWF: Institut für Informatik

ECTS Credits

Angebotsmuster

Bewertung/Benotung

Repetierbarkeit

Leistungsnachweis

Unterrichtssprache

Lehrformen

Lernziel

Allgemeine Beschreibung

Die Informationen zu diesem Modul entnehmen Sie bitte dem Vorlesungsverzeichnis.

Voraussetzungen

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Practical Training In-House

06SM521-510

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Semester

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis dokumentierte praktische Arbeit

Unterrichtssprache Deutsch und/oder Englisch

Lehrformen Praktikum

Lernziel

The students: - get in touch with research; - read scientific literature; - are involved in evaluation processes; - take over particular tasks in the context of a project; - are involved in the preparation of articles; - get insights into practical work; - deepen their knowledge and skills with respect to a particular topic.

Allgemeine Beschreibung

In this module, the students get in touch with scientific project work, that is, they learn how to do basic research. In order to accomplish these kind of skills, they read scientific literature, prepare and annotate data, apply statistical and machine learning methods to solve particular problems. They are also involved in the preparation of articles for workshops and conferences. The students work on a particular (partial) problem in a scientific context or even running project. This module can be booked to credit work done in a scientific project at the UZH. This module can be booked with 6 or 9 ECTS points. The amount of points will be decided in consultation with the module coordinator.

Voraussetzungen

This module cannot be booked by the students themselves, the booking has to be authorized by the module coordinator. There is no entitlement to this module, the module will only be offered if a suitable position is available in a project. The requirements will be defined according to the topic.



Practical Training Off-Site

06SM521-511

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Semester

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis dokumentierte praktische Arbeit

Unterrichtssprache Deutsch und/oder Englisch

Lehrformen Praktikum

Lernziel

The students: - get in touch with language technology companies; - learn to connect theory and practical work; - get to know the structures and processes of companies; - apply what they have learned; - broaden their knowledge of practical issues.

Allgemeine Beschreibung

The students gain experience in the application of computational linguistics. They get in touch with the structures and procedures of companies and are involved in the realization of software in order to solve particular problems of these companies. The students apply what they have learned and adapt it to the needs of a specific commercial sector. Practical Trainings Off-Site are usually stays at companies or public organizations that are involved with Natural Language Processing. The training has to have a relation to Natural Language Processing and they have to be organized autonomously. This module can be booked with 3 or 6 ECTS points. The amount of points will be decided in consultation with the module coordinator.

Voraussetzungen

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Programming Project

06SM521-512

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Semester

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis dokumentierte praktische Arbeit

Unterrichtssprache Deutsch und/oder Englisch

Lehrformen Sonstiges

Lernziel

The students: - autonomously design a project; - realize the project plan; - use existing tools; - do software engineering; - document their work according to standards; - evaluate the results; - use software repositories.

Allgemeine Beschreibung

Programming projects aim at the consolidation of programming skills and the acquisition of software engineering skills. Starting with a particular research question and relevant literature, they work on a solution, define milestones, acquire and/or annotate data, implement a program and evaluate it using appropriate data. This module can be booked to credit work done in programming project. This module can be booked with 3, 6 or 9 ECTS points. The amount of points will be decided in consultation with the module coordinator.

Voraussetzungen

This module cannot be booked by the students themselves, the booking has to be authorized by the module coordinator. Before a programming project is started, it is essential to get the permission of the module coordinator (per Email). The prerequisites will be set according to the topic.



Student Teaching Assistent

06SM521-513

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Semester

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis dokumentierte praktische Arbeit

Unterrichtssprache Deutsch und/oder Englisch

Lehrformen Sonstiges

Lernziel

The students: - cope with computational linguistics content from a teaching perspective; - learn to prepare computational linguistics content in a way tailored to a student's audience; - learn to correct exercises and give appropriate feedback.

Allgemeine Beschreibung

A student teaching assistance serves the acquisition of basic teaching skills. This requires a deeper insight of the contents of the associated lecture and the ability to prepare teaching material in order to help the students to better understand it. The task also involves the preparation and correction of exercises. This module can be booked to credit the conducting of exercises/tutorials. This module can be booked with 3 or 6 ECTS points. The amount of points will be decided in consultation with the module coordinator.

Voraussetzungen

This module can not be booked by the students themselves, the booking has to be authorized by the module coordinator. It is essential to get the permission of the module coordinator (per Email). The lecturers have to be included in the communication. The open positions for student teaching assistants are usually posted on the mailing list of the Institute of Computational Linguistics (cl-list@lists.ifi.uzh.ch) a few weeks before the semester starts. Students interested in conducting exercises/tutorials of a specific course can apply anytime for the position directly with the lecturer and the module coordinator. In order to be a student teaching assistant of a module, the module in question must have been passed successfully beforehand.



Phonetic variation

06SM521-522

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Frühlingssemester

Bewertung/Benotung bestanden/nicht bestanden

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio: At the beginning of the semester students create a pool of their own recordings. During the semester they run guided analyses on their material both as part of the course but also as personal homework. In addition, students are required to hand in a small-scale empirical study (7-10 pages) using their recordings and/or additional recordings from other sources to be handed in at the last meeting of the semester. Both their analyses during the semester (50%) and their final report form their portfolio and thus the basis for the evaluation of their performance (50%).

Unterrichtssprache Englisch

Lehrformen Übung

Lernziel

The students learn about phonetic variation and its possible causes and they gain insights into the varieties of different languages. They can apply the methods used in phonetics to measure vowels, consonants and prosody and they gain experience in empirical research.

Allgemeine Beschreibung

All spoken languages show phonetic variation. Some variants are salient and can be the topic of lay persons' metalinguistic comments or jokes, other variants are more subtle. Variation can be due for example to the speaker's origin, to the individual, to language contact (e.g. foreign accent), to the speaking style, to the phonetic environment or to the speaking rate. The focus of this course lies on phonetic variation in German, for example between or within Swiss German dialects or national varieties of Standard German; however, other languages can be taken into consideration as well. Participants will be doing analyses and measurements with their own recordings, which can be in (Swiss) German, English or French.

Voraussetzungen

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Phonology

06SM521-523

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Herbstsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis written exam

Unterrichtssprache Englisch

Lehrformen Vorlesung

Lernziel

Students are familiar with the basic concepts of phonological analysis and are able to apply them to both known and unknown languages. They are aware of the most important phonological theories of the 20th and 21st century.

Allgemeine Beschreibung

This course offers an introduction to the various domains of phonological investigation and presents selected topics of phonological analysis. It introduces the basic concepts of segmental phonology (phoneme, allophone, neutralization, distinctive features, phonological rules and processes), phonotactics (in particular syllable structure), and prosody (quantity, stress, tone, intonation). Phonological phenomena of a variety of languages are illustrated. The course mostly focuses on language structures, providing at the same time a historical overview of phonological theories.

Voraussetzungen

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Speech perception

06SM521-524

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Herbstsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio: (a) written assignments throughout term (50%), (b) written exam (50%).

Unterrichtssprache Englisch

Lehrformen Vorlesung

Lernziel

The objectives of this lecture series are to (a) understand the fundamental complexity of speech perception, (b) understand a variety of different theories explaining speech perception, (c) understand about a variety of different physical cues that contribute to the perception of speech.

Allgemeine Beschreibung

Human listeners can retrieve abstract linguistic messages from speech signals despite of the fact that there is strong variability in acoustic realizations of speech between individuals or between situations. Acquiring a language, listeners have to learn about how sounds group to syllables and syllables group to words and they can perform such decisions on speech despite of highly ambiguous cues to sounds, syllables or words. For this reason different theories of speech perception propose various solutions as to how speech can be perceived apparently effortlessly given its highly variable nature.

Voraussetzungen

The participation in "Fundamentals of Speech Sciences and Signal Processing" is highly recommended.



The sounds of the world's languages

06SM521-525

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Frühlingsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis written exam

Unterrichtssprache Englisch

Lehrformen Vorlesung

Lernziel

Students are familiar with the great variety of vowels and consonants present in the world's languages and understand the articulatory mechanisms involved in the production of speech sounds. They know the corresponding symbols of the International Phonetic Alphabet as well as the acoustic characteristics of different vowel and consonant types. Students gain knowledge about the areal distribution of speech sounds among the languages of the world, the structure of phoneme inventories, and the basic concepts and methods of phonological typology.

Allgemeine Beschreibung

The languages of the world display a considerable variety of vowels and consonants, though not all of them are equally frequent. This course first offers a systematic description of speech sound based on the charts of the International Phonetic Alphabet (IPA). Speech sounds of different classes are presented according to major classes (vowels, obstruents, sonorants, non-pulmonic consonants); the underlying articulatory processes are illustrated in terms of their acoustic realization (e.g. by spectrographic analyses). The second part of the course provides an introduction to theoretical and methodological issues of phonological typology from the beginnings of European structuralism to the phonological databases of today. Also, we will discuss the question as to which extent universal principles may be detected in the variety of phonological systems.

Voraussetzungen

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Experiments with speech

06SM521-526

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Frühlingsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio: (a) written assignments throughout term (30%), (b) oral presentation in class (30%), (c) written report (40%).

Unterrichtssprache Englisch

Lehrformen Seminar

Lernziel

The course has the objectives to learn how to (a) formulate testable experimental hypotheses based on theoretical knowledge; (b) plan and execute experiments with speech; (c) process and manipulate speech for experiments; (d) analyze the quantitative data from experiments; (e) interpret the obtained results; (f) compare and discuss the results with related research.

Allgemeine Beschreibung

The media often reports that speech played backwards contains secret messages. Is that true? What does it sound like? Scientists showed that babies can extract information from the speech signal without even knowing anything about the linguistic system. In backward speech, such abilities may be lost. Other research showed that non-native speakers can be identified in speech even when it is played backwards. Why playing speech backwards? How is this done? In this seminar we will learn how to study speech communication using experimental techniques. Students will run their own experiments in which they will address a variety of questions, for example how we segment a continuous speech stream into words or syllables, how we identify different languages or different speakers or how we communicate in strong background noise. There are many fascinating things to discover about speech communication but most likely not that speech played backwards contains secret messages.

Voraussetzungen

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Voice analysis

06SM521-527

Anbietende Organisationseinheit PhF: Institut für Computerlinguistik

ECTS Credits 6

Angebotsmuster 1-semesterig, jedes Herbstsemester

Bewertung/Benotung 1-6, in Halbschritten

Repetierbarkeit einmal wiederholbar, erneut buchen

Leistungsnachweis Portfolio: (a) written assignments throughout the term (50%), (b) written report (50%).

Unterrichtssprache Englisch

Lehrformen Seminar

Lernziel

The objectives of this seminar are to understand (a) which information is encoded in the human voice; (b) how multiple information can be encoded in voice simultaneously; (c) how different types of information interact with each other; (d) the different social functions of voice (e) how the knowledge about information in voice can be applied, for example in fields such as forensic voice analysis.

Allgemeine Beschreibung

Next to containing a linguistic message, voices play an essential role in human social interaction. Humans can recognize other individuals by their voice, rely on being recognized and recognition failure is a social misconduct that can lead to high embarrassment. Voices signal the emotional state, the fertility in females and help selecting the right mating partner. Voices are a key part of our personality and shape the trust we have in others. Non-speech information in voice has traditionally be viewed as noise in the speech signal that needs to be cancelled out. Recent research, however, shows that non-speech information in voice actually enhances speech communication.

Voraussetzungen

The participation in "Fundamentals of Speech Sciences and Signal Processing" is highly recommended.
