

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Natural Language Processing, PG_00053344								
Field of study	Biomedical Engineering								
Date of commencement of studies	February 2024		Academic year of realisation of subject			2024/2025			
Education level	second-cycle studies		Subject group			Optional subject group			
Mode of study	Full-time studies		Mode of delivery			at the university			
Year of study	2		Language of instruction			Polish			
Semester of study	3		ECTS credits			2.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Faculty of Electronics, Telecommunications and Informatics								
Name and surname	Subject supervisor		dr hab. inż. Jan Daciuk						
of lecturer (lecturers)	Teachers		dr hab. inż. Jan Daciuk						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	15.0	0.0	0.0	15.0		0.0	30	
	E-learning hours inclu	uded: 0.0				1		1	
Learning activity and number of study hours	Learning activity	Participation in classes includ plan	n didactic ed in study	Participation in consultation hours		Self-study		SUM	
	Number of study hours	30		2.0		18.0		50	
Subject objectives	The purpose of this subject is to familiarize students with basic techniques used in natural language processing and to to prepare them for work on development of applications for that domain.								
Learning outcomes	Course outcome		Subject outcome		Method of verification				
	[K7_W01] knows and understands, to an increased extent, mathematics to the extent necessary to formulate and solve complex issues related to the field of study		knows and understands profoundly mathematics in the scope that is necessary for formulating and solving complex issues in natural language processing			[SW1] Assessment of factual knowledge			
	[K7_W08] knows and understands, to an increased extent, the fundamental dilemmas of modern civilisation, the main development trends of scientific disciplines relevant to the field of education		Knows and profoundly understands the influence of natural language processing techniques on contemporary civilization and its current development trends.			[SW1] Assessment of factual knowledge			
	[K7_K02] is ready to provide critical evaluation of received content and to acknowledge the importance of knowledge in solving cognitive and practical problems		is ready for critical assessment of incoming contents, accepting significance of knowledge in solving cognitive and practical problems in scope of the natural language processing			[SK5] Assessment of ability to solve problems that arise in practice			
	[K7_U05] can plan and conduct experiments related to the field of study, including computer simulations and measurements; interpret obtained results and draw conclusions		can plan and can conduct experiments concerning natural language processing, interpret the results and draw conclusions			[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools			

Lexicon: data structures, morphology, Vector representation of semantics. Spoling consentation. Spoling consentation. Spoling consentation. Spoling consentation. Pois tagging. Syntax. Parsing. Dialogue systems. Question answering. Reference resolution. Reference resolution. Symmarization. Morphology. Document retrieval. Parsing. Dialogue systems. Cuestion answering. Reference resolution. Symmarization. Morphology. Document retrieval. Parsing. Dialogue system. Nowledge of Polish linguistics is a plus. Assessment methods and criteria Subject passing criteria Passing threshold Percentage of the final grade projects Recommended reading Basic literature Daniel Jurafsky. James H. Martin, Speech and Language Processing. An Introduction to Natural Language Processing. Computational Linguistics and Speech Recognition. Second Edition, Pearson/Pendic Hall 2009. Resources addresses Pools with the system. Remerche edu-jurafsky/sig2/ Konneth R. Bassky, Laur Kantunen, Pines State Morphology. (SLI). Payeeth State Morphology. (SLI). Resources addresses Polish and state function. A practical guide to applying deep learning architectures Consec Studies, Pearson Fendice duel/urafsky/sig2/ Konneth R. Bassky	Subject contents	Lecture:							
Prerequisites and co-requisites Knowledge of higher mathematics and machine learning, programming skills, especially in Python. Basic knowledge of Polish linguistics is a plus. Assessment methods and criteria Subject passing criteria Passing threshold Percentage of the final grade projects Recommended reading Basic literature Daniel Jurafsky, James H. Martin, Speech and Language Processing, An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition, Second Edition, Pearson/Pernetice Hall, 2009. Third edition draft. https://web.stanford.edu/-jurafsky/sjp3/ Kenneth R. Beasiey, Lauri Karitumen, Finite State Morphology, CSLI Publications, 2003. Rayesh Arumugam, Rajalingappa Shamugamani, Hands-on Natural Language Processing with Python. A practical guide to applying deep learning architectures to your NLP applications, Packt, 2018. Paul Detiel, Harvey Detiel, Python Or Programmers: with Big Data and Artificial Intelligence Case Studies. Pearson Education, Inc. publishing as Prentice Hall, 2019 Supplementary literature Alicja Nagórko, Podręczna gramatyka języka polskiego, Wydawnictwo Natural Language Processing, An Introduction to Natural Language Processing, An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition Uzupelniające Adresy na platformie eNauczanie: Example issues/ example questions/ tasks being completed Not applicable		Lexicons: data structures, morphology. Vector representation of semantics. Document retrieval. Spelling correction. POS tagging. Syntax. Parsing. Dialogue systems. Question answering. Reference resolution. Summarization. Machine translation. Project: Text preprocessing. Morphology. Document retrieval. Parsing. Dialogue system.							
Assessment methods and criteria Subject passing criteria Passing threshold Percentage of the final grade projects 50.0% 50.0% 50.0% exam 50.0% 50.0% Recommended reading Basic literature Daniel Jurafsky, James H. Martin, Speech and Language Processing, Computational Linguistics and Speech Recognition, Second Edition, Pearson/Prentice Hall, 2009. Third edition draft: https://web.stanford.edu/~jurafsky/slp3/ Kenneth R. Beesley, Lauri Karitunen, Finite State Morphology, CSLI Publications, 2003. Rayesh Arumugam, Rajalingappa Shammugamani, Hands-on Natural Language Processing with Python. A practical guide to applying deep learning architectures to your NLP applications, Packt, 2018. Paul Deitel, Haney Deitel, Python for Programmers: with Big Data and Artificial Intelligence Case Studies, Pearson Education, Inc. publising as Prentice Hall, 2019 Supplementary literature Alicja Nagórko, Dodręzna gramatyka języka polskiego. Wydawnictwo Naukowe PWN, Warszawa, 2012. Zygmunt Saloni, Włodzimierz Gruszczyński, Marcin Woliński, Robert Wolosz, Grammatical Dictionary of Polish - on-line version. eResources addresses Podstawowe https://web stanford.edu/-jurafsky/slp3 - Draft of the third edition of Daniel Jurafsky, James H. Martin, Speech and Language Processing, An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition Example issues/ example questions/ tasks being completed Not applicable	Prerequisites and co-requisites	Knowledge of higher mathematics and machine learning, programming skills, especially in Python. Basic knowledge of Polish linguistics is a plus.							
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