



**Data Science:
Introduction to Text Mining with R (S41)
10 – 13 July 2023**

Course Director: Dr. Ayoub Bagheri
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Day	Time	Type	Description	Location
Monday	09:00 – 10:30	Lecture	Introduction to R & RStudio Introduction to text mining Regular expressions	Victor J. Koningsberger building , room PANGEA
	10:45 – 11:45	Computer Lab	R intro and processing textual data in R	
	11:45 – 12:30	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	
	12:30 – 14:00	Lunch Break	In Educatorium	
	14:00 – 15:30	Lecture	Preprocessing text: <ul style="list-style-type: none">- Cleaning- Tokenization (n-grams)- Stop words removal- Stemming	
	15:45 – 16:30	Computer Lab	Text preprocessing Visualisation N-gram tokenization	
	16:30 – 17:00	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	



Day	Time	Type	Description	Location
Tuesday	09:00 – 10:30	Lecture	Text as features: - Vector space model - Representation Text classification	Victor J. Koningsberger building , room PANGEA
	10:45 – 11:45	Computer Lab	Training and test data Naïve Bayes and SVM	
	11:45 – 12:30	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	
	12:30 – 14:00	Lunch Break	In Educatorium	
	14:00 – 15:30	Lecture	Sentiment analysis	
	15:45 – 16:30	Computer Lab	Sentiment classification	
	16:30 – 17:00	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	

Day	Time	Type	Description	Location
Wednesday	09:00 – 10:30	Lecture	Feature selection in text	Victor J. Koningsberger building , room PANGEA
	10:45 – 11:45	Computer Lab	Filter-based feature selection Embedded feature selection	
	11:45 – 12:30	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	
	12:30 – 14:00	Lunch Break	In Educatorium	
	14:00 – 15:30	Lecture	Text clustering & topic modeling	
	15:45 – 16:30	Computer Lab	K-Means Latent Dirichlet allocation	
	16:30 – 17:00	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	



Day	Time	Type	Description	Location
Thursday	09:00 – 10:30	Lecture	Word embeddings	Victor J. Koningsberger building , room ATLAS
	10:45 – 11:45	Computer Lab	Training word vectors Vector similarities	
	11:45 – 12:30	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	
	12:30 – 14:00	Lunch Break	In Educatorium	
	14:00 – 15:30	Lecture	Neural networks and text mining applications	
	15:45 – 16:30	Computer Lab	Using pre-trained word vectors Embedding layer	
	16:30 – 17:00	Plenary Discussion	Students and teachers discuss and present their solutions to the computer lab	

For information about the Social Programme, please visit the [Utrecht Summer School website!](#)