

Conversational AI with Python: From Chatbots to Virtual Assistants

Module	Subtopic	Exercise
Module 1: Chatbots 101	Introduction to conversational software	
	Echo bot 1	(Exercise)
	Echo Bot 2	(Exercise)
	Creating a personality	
	Chit chat	(Exercise)
	Adding variety	
	ELIZA 1 - asking questions	(Exercise)
	Text processing with regular expressions	
	ELIZA 2 – Extracting key phrases	(Exercise)
	ELIZA 3 – Pronouns	(Exercise)
	ELIZA 4 – Putting it all together	(Exercise)
	Understanding intents and entities	
	Intent classification with regex 1	(Exercise)
	Intent classification with regex 2	(Exercise)
Module 2: Understanding Natural language	Entity extraction with regex	(Exercise)
	Word vectors	
	Word vectors with spaCy	(Exercise)
	Intents and classification	
	Intent classification with sklearn	(Exercise)
	Entity extraction	
	Using spaCy's entity recognizer	(Exercise)
	Assigning roles using spaCy's parser	(Exercise)
	Robust language understanding with rasa NLU	(Exercise)
	Data-efficient entity recognition	(Exercise)
Module 3: Building a virtual assistant	Virtual assistants and accessing data	
	SQL basics	

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	SQL statements in Python	(Exercise)
	Exploring a DB with natural language	
	Creating queries from parameters	(Exercise)
	Using your custom function to find hotels	(Exercise)
	Creating SQL from natural language	(Exercise)
	Incremental slot filling and negation	
	Refining your search	(Exercise)
	Basic negation	(Exercise)
	Filtering with excluded slots	(Exercise)
Module 4: Dialogue	Why statefulness is key	
	Form filling	(Exercise)
	Asking contextual questions	(Exercise)
	Dealing with rejection	(Exercise)
	Asking questions and queuing answers	
	Pending actions 1	(Exercise)
	Pending actions 2	(Exercise)
	Pending state transitions	(Exercise)
	Summarizing 1	(Exercise)
	Summarizing 2	(Exercise)
	Frontiers of dialogue research	
	Generating text with neural networks	(Exercise)