Natural Language Processing Foundations for Business

Introduction

Natural Language Processing (NLP) is a cornerstone in the realm of AI, illuminating its historical evolution, diverse applications, and essential tools and techniques. Delve into this module to uncover the rich tapestry of NLP, from its inception to its contemporary significance. Equip yourself with the tools and techniques that empower NLP systems to understand, interpret, and generate human language seamlessly. Embark on this journey to unlock the transformative potential of NLP in shaping the future of AI and human interaction with the essential knowledge and practical skills required to leverage NLP effectively in real-world business scenarios.

Target Audience	Prerequisite	Level	Duration
Everyone	Demystifying AI in Business	★★★☆☆ Intermediate	3.5 Hours

Module Roadmap

The module operates in a hybrid mode: lessons are instructor-independent and delivered through our cutting-edge online platform. It comprises 03 main lessons and 01 check-in session for topic-related discussions.

Please find below an illustrative summary outlining the lessons, their corresponding outcomes, check-in session, and the time required for each:

01   History and Evolution of NLP

▶ Trace the fascinating history and evolution of NLP, from its humble beginnings to cutting-edge advancements.

▶ Examine key milestones, breakthroughs, and the challenges that have shaped the field of NLP.

▶ Familiarise yourself with the impact of NLP from the early 21st century to the present day

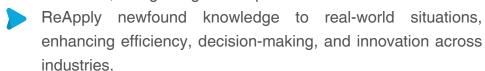**30 minutes**

02 Text Analysis and Classification

▶ Master vital NLP applications for business: text classification, sentiment analysis, named entity recognition, language identification, and basic part-of-speech tagging

▶ Learn when and how to apply these techniques effectively in real-world business scenarios.

▶ Lay a solid foundation for leveraging language processing to meet diverse business needs.

🕐 30 minutes

03 Information Retrieval and Summarisation

▶ Gain a deep understanding of Information Retrieval and Summarisation concepts and applications across domains.

▶ Learn to strategically apply these NLP techniques in business scenarios, recognising their impact.

▶ ReApply newfound knowledge to real-world situations, enhancing efficiency, decision-making, and innovation across industries.

🕐 30 minutes

04 Language Translation and Speech Processing

▶ Master statistical and neural machine translation for cross-cultural communication.

▶ Develop expertise in speech processing, enhancing user experiences across domains.

▶ Explore voice-activated assistants and their transformative role in human-computer interaction.

🕐 30 minutes

05 Text Generation and Dialogue Systems

▶ Explore text generation techniques for human-like content and understand its applications.

▶ Delve into dialogue systems, from customer service bots to advanced virtual assistants.

▶ Investigate coreference resolution for clearer communication.

🕐 30 minutes

06   Advanced NLP Techniques and Applications

- Embark on Advanced NLP Techniques, beginning with Optical Character Recognition (OCR).
- Explore Language Modelling's predictive power across sentiment analysis, translation, and content creation.
- Uncover Word Embeddings' significance and delve into Attention Mechanisms for enhanced contextual understanding and language processing automation.

🕐 30 minutes

07   End-to-End NLP Tools and Techniques

- Master data collection, cleaning, preprocessing, storage, building models and orchestration techniques and tools.
- Learn to evaluate, deploy, monitor, and update NLP models for continuous improvement.
- Explore both open source and proprietary tools for all the end-to-end steps.

🕐 30 minutes

A New Way to Learn AI

Countless AI introductions exist online, what sets this module apart is not solely the content, but the innovative approach to presentation and delivery methods we offer:

1 Instructor Independent
Empowers learners to explore, discover, and master content independently.

2 Interactive Learning
Engaging interactions foster deep understanding through hands-on exploration and practice.

3 Relevant Content
Bridges theory with real-world applications, offering applied insights through use-cases.

4 Online Delivery
Accessible globally, providing flexible, dynamic online learning at your fingertips.

CeADAR
Ireland's Centre for AI   eLearning

Contact us for more information!
✉ **krithika.komalapati@ucd.ie**