

Homework 5: Named Entity Recognition (NER)

Points: 20 | **Due:** Sunday, March 1, 2026 @ 11pm Pacific

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Compute: CPU (free tier) — GPU recommended for bonus

Learning Objectives

1. **Understand** Named Entity Recognition concepts
 2. **Use** spaCy for entity extraction
 3. **Extract** business-relevant entities from text data
 4. **Analyze** entity patterns in reviews
 5. **Visualize** entity distributions
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Grading

Component	Points	What We're Looking For
Setup & Data	3	spaCy loaded, data ready
NER Demo	4	Understand entity types
Entity Extraction	6	Extract ORG, PRODUCT, GPE from reviews
Analysis	4	Identify patterns in entity mentions
Visualization	3	Clear bar charts of top entities
Total	20	

Entity Types

spaCy recognizes these business-relevant entities:

Entity	Description	Example
ORG	Organizations	“Apple”, “Amazon”
PRODUCT	Products	“iPhone”, “Kindle”
GPE	Countries, cities	“New York”, “USA”
PERSON	People names	“Tim Cook”
MONEY	Monetary values	“\$50”

Instructions

1. Open MIS769_HW5_NER.ipynb in Google Colab
2. Load spaCy and understand entity types
3. Extract entities from your review dataset

4. Analyze: Which organizations/products are mentioned most?
 5. Visualize the top entities by category
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Questions to Answer

- **Q1:** Were the extracted entities accurate? What errors did you observe?
 - **Q2:** What business insights can you derive from entity mentions?
 - **Q3:** How could you improve NER for your specific domain?
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Submission

Upload to Canvas: - Your completed .ipynb notebook with all cells executed

— *Richard Young, Ph.D.*