Starting and Managing a Career in NLP

22 October 2020

Natural Language Processing (NLP) is the use of machine learning, statistics, linguistics, and other research to help software understand and interact with human language.

MIT Technology Review

Artificial intelligence / Machine learning

A GPT-3 bot posted comments on Reddit for a week and no one noticed

Under the username /u/thegentlemetre, the bot was interacting

Natural Language Processing (NLP) Market Size is Projected To Reach USD 27.6 Billion By 2026 - Valuates Reports English

Valuates Reports

NEWS PROVIDED BY

Valuates Reports →
Jul 09, 2020, 12:04 ET

Facebook

Introducing the First AI Model That Translates 100 Languages Without Relying on English

October 19, 2020
By Angela Fan, Research Assistant

Symbolic NLP (1950s - early 1990s) [edit]

The premise of symbolic NLP is well-summarized by John Searle's Chinese room experiment: Given a c[...] Chinese phrasebook, with questions and matching answers), the computer emulates natural language u[...] tasks) by applying those rules to the data it is confronted with.

- **1950s**: The Georgetown experiment in 1954 involved fully automatic translation of more than sixty Russian sentences into English. The authors claimed that within three or five years, machine translation would be a solved problem.[2] However, real progress was much slower, and after the ALPAC report in 1966, which found that ten-year-long research had failed to fulfill the expectations, funding for machine translation was dramatically reduced. Little further research in machine translation was conducted until the late 1980s when the first statistical machine translation systems were developed.

Sources

1. "Introducing the First AI Model That Translates 100 Languages Without Relying on English": https://about.fb.com/news/2020/10/first-multilingual-machine-translation-model/

2. "Natural language processing": https://en.wikipedia.org/wiki/Natural_language_processing

3. "A GPT-3 bot posted comments on Reddit for a week and no one noticed": https://www.technologyreview.com/2020/10/08/1009845/a-gpt-3-bot-posted-comments-on-reddit-for-a-week-and-no-one-noticed/

4. "Natural Language Processing (NLP) Market Size is Projected To Reach USD 27.6 Billion By 2026 - Valuates Reports": https://www.prnewswire.com/news-releases/natural-language-processing-nlp-market-size-is-projected-to-reach-usd-27-6-billion-by-2026---valuates-reports-301091047.html

How do you **start** a successful career in NLP?

How do you **strategize** the next 10 years?
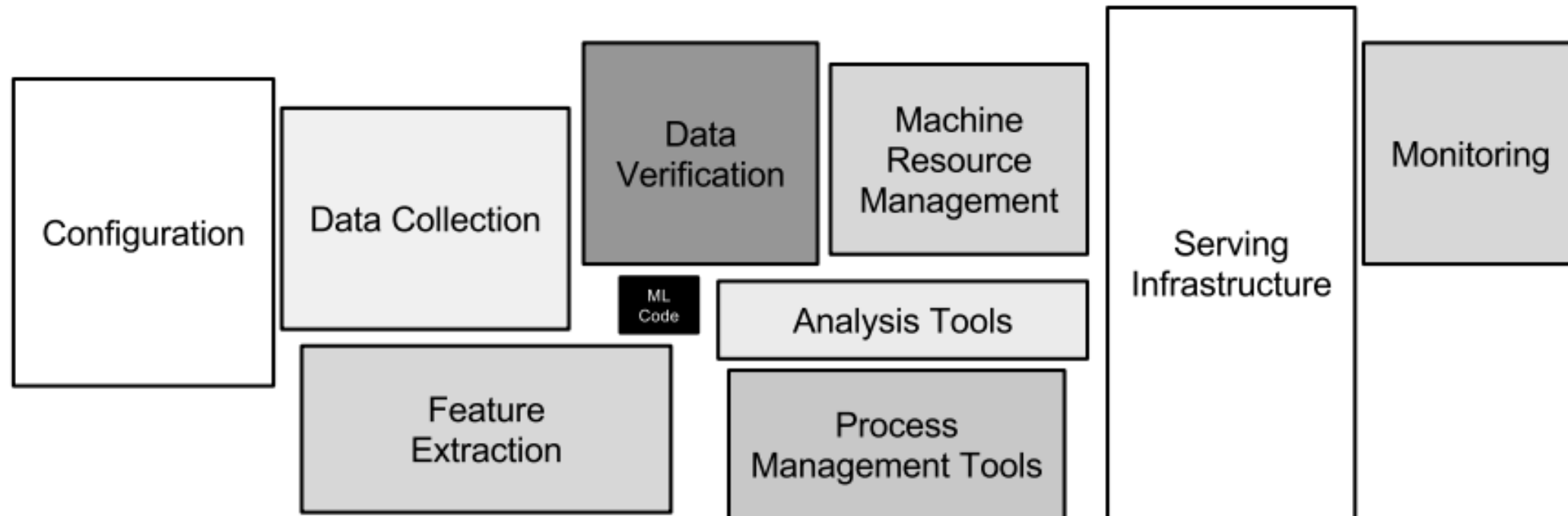
How do you **strategize** the next 10 years?

How do you **start** a successful career in NLP?

Understand data collection. You can't do NLP without data.

Everything *around* your NLP algorithms trumps your NLP algorithms

Source: "Hidden Technical Debt in Machine Learning Systems". See: https://papers.nips.cc/paper/5656-hidden-technical-debt-in-machine-learning-systems.pdf

Learn how to provide and communicate solutions; not technical algorithms

Credit: Alexander Schimmek at https://unsplash.com/photos/Aohf8gqa7Zc

"How do I sell more products?"

Can we use content clustering to relate products to each other?

"How can I ensure customers are happier?"

Can we apply sentiment analysis to customer feedback? Which algorithms would be best?

"How will our investment fund improve its alpha?"

Can we crawl corporate filings and use a classifier to determine if statements are misleading?

How do you **strategize** the next 10 years?

How do you **start** a successful career in NLP?

Do you want to go deep,
or broad?

Expert?

Generalist?
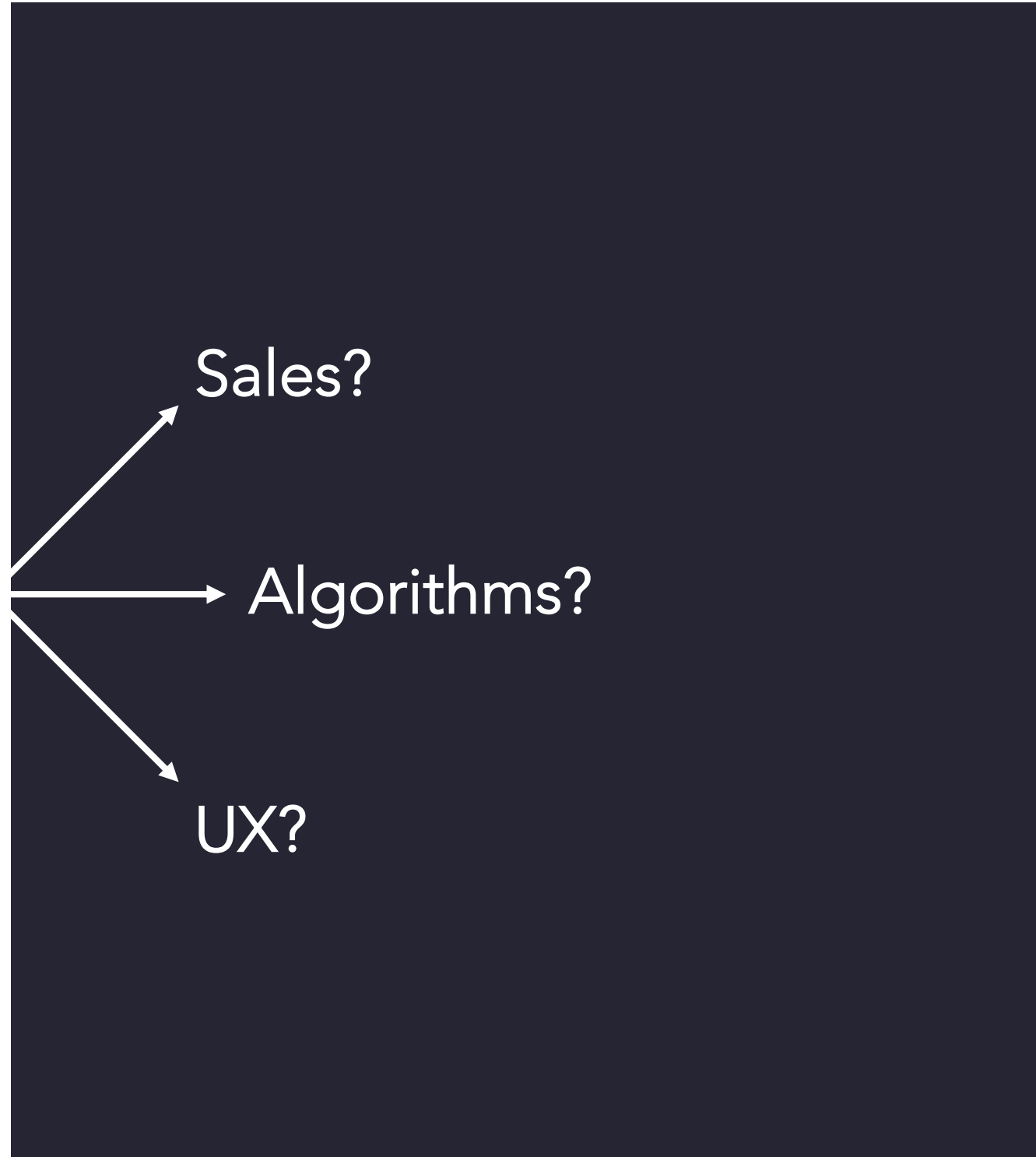
Do you want to go deep,
or broad?

Expert?

~~Generalist?~~
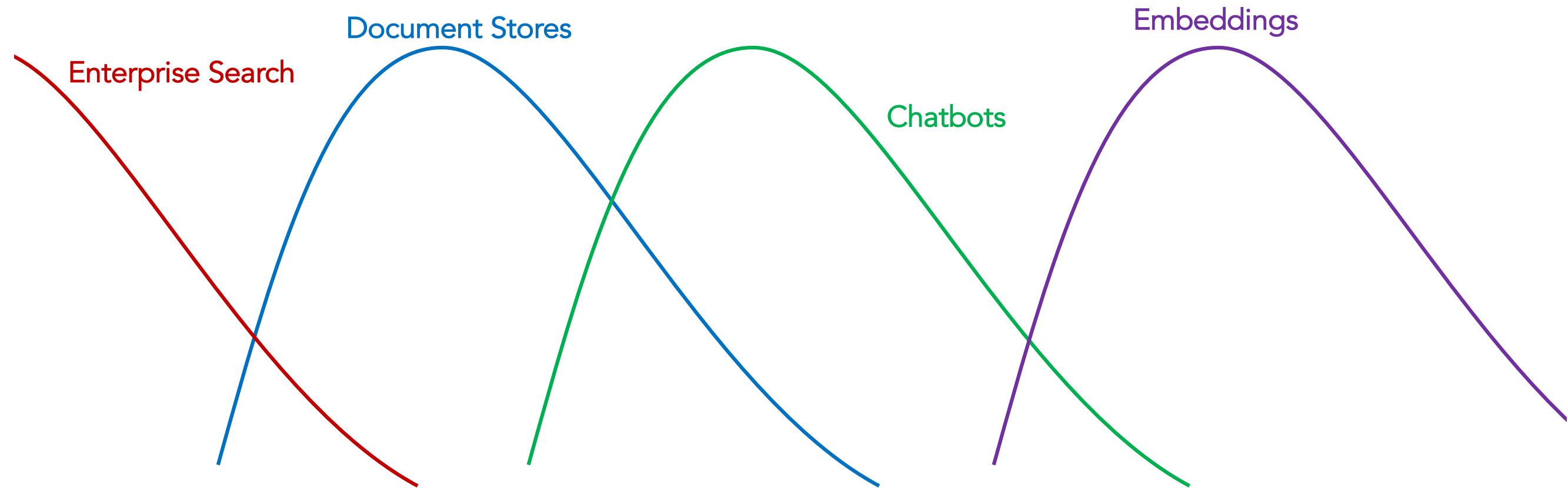Solution Provider?

What are your strengths?

Sales?

Algorithms?

UX?

Understand the hype cycles, and get ahead of them

Enterprise Search
Document Stores
Chatbots
Embeddings

Understand the hype cycles, and get ahead of them

Enterprise Search

Document Stores

Embeddings

Understand the technologies; where they apply and where they do not.

Empathy!

For the users

For the business

…and the hiring managers

A few tactical points for launching that career…

- Build an NLP portfolio where you showcase your end-to-end projects.

- Build an understanding of architecture options.

- Evangelize good ETL, data cleaning, and MLOps architectures.

Thank you