

ABB - Session 1

Introduction, Coding with AI

Shaw Talebi



Today's Session

1. About ↗

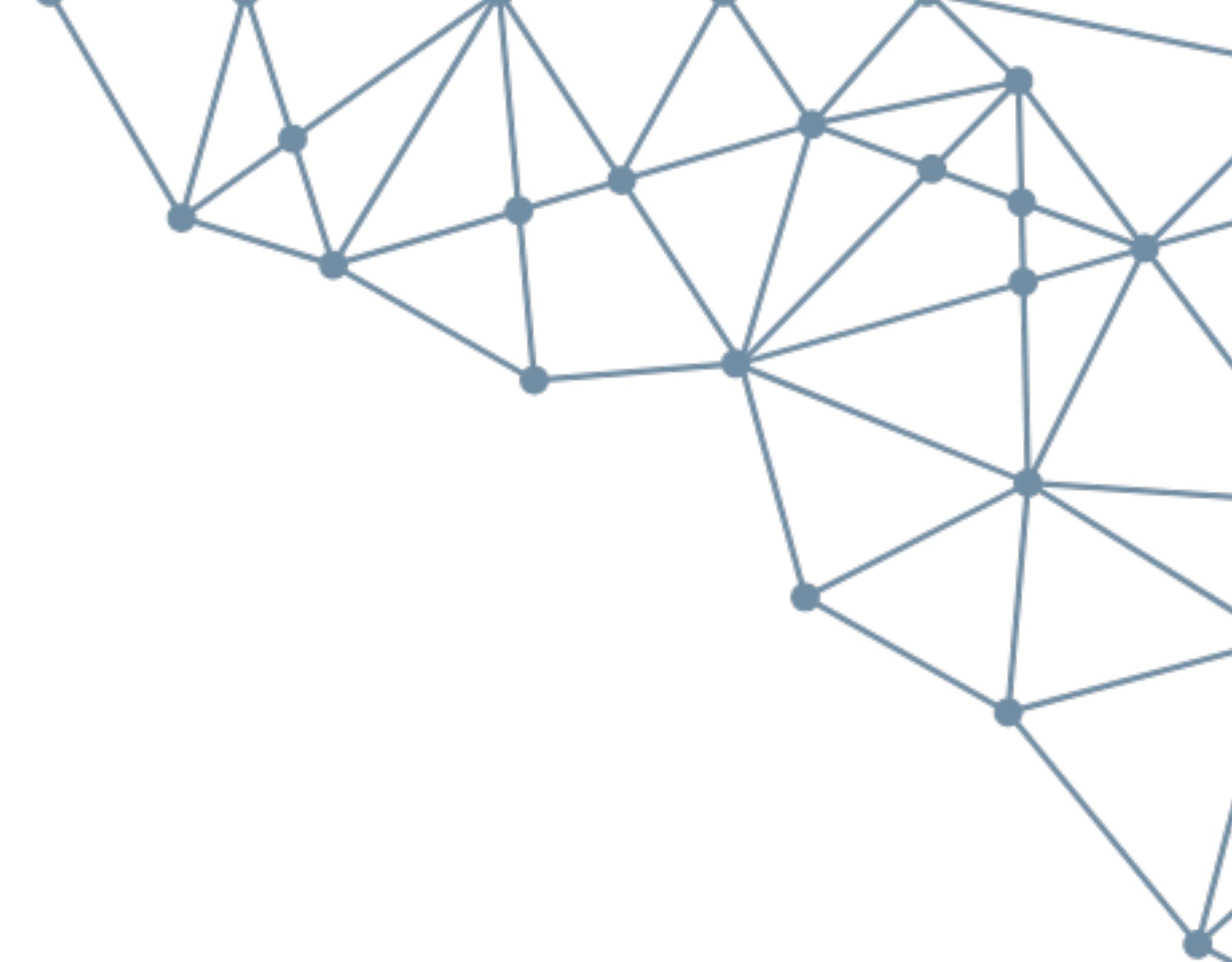
- 1.1. About Me
- 1.2. Course Expectations & Logistics

2. An Introduction to AI ↗

- 2.1. What is AI?
- 2.2. 3 Types of Software
- 2.3. Python

3. Example Code ↗

- 3.1. Scraping AI Job Board (with ChatGPT)
- 3.2. Top AI Jobs Dashboard (vibe coded)



About

About Me



Physics PhD
AI Researcher

2018



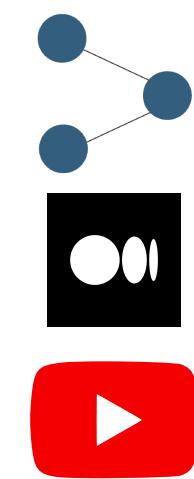
Data Scientist

2022



Data Entrepreneur

2023



Helped over 100 clients

~17.5k followers

~55k subscribers



What You Can Expect...

Course Overview

Week 1	Session 1: Intro, Software 1.0–3.0, Coding with AI	
Week 2	Session 2: LLMs, Prompt Engineering	
Week 3	Session 3: RAG, Text Embeddings	
Week 4	Session 4: Tool Use, AI Agents	
Week 5	Session 5: Fine-tuning	
Week 6	Session 6: AI Project Management	

*We are here

Weekly Sessions, Friday at 10AM CST

What You Can Expect...

Homework (optional)

Pre-work

(est. 1-2 hr/wk)

Watching videos or reading articles to prepare for upcoming lectures

Pros

Get preview of upcoming lecture topics

Prepare questions before lecture

Projects

(est. 1-10 hr/wk)

Open-ended assignments aimed at applying learnings from lecture.

Pros

Solidify understanding of key concepts

Feature projects in portfolio

Receive feedback from instructor/peers

Pro tip: build projects on top of each other over multiple weeks

*Weekly pre-work & projects are made available **day of lecture***

What You Can Expect...

Course Logistics

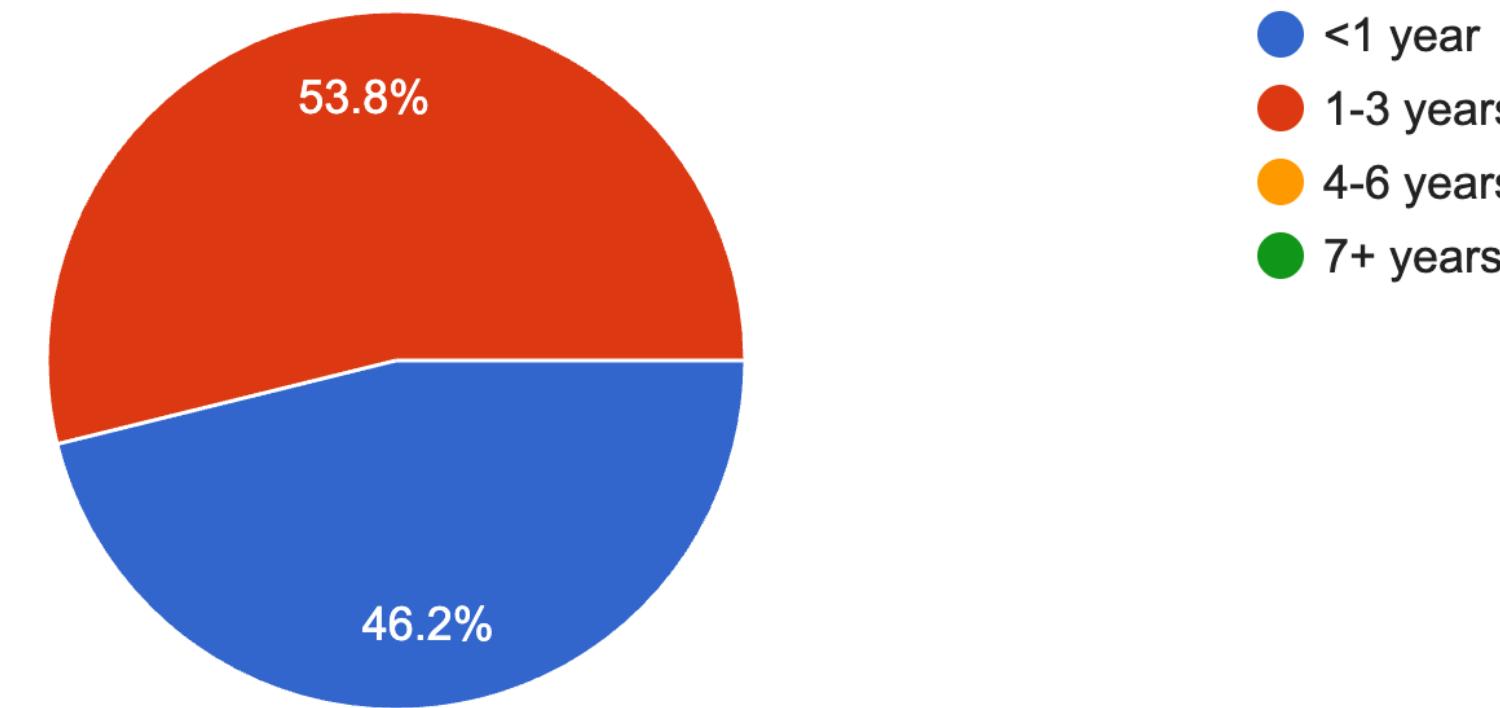
- **Weekly Sessions, Fridays at 10AM CST**
 - ~30 min concepts, ~60 min code, ~25 min QA, ~5 min break
 - Please have **cameras on** during lecture (makes it more immersive) :)
 - **Class time is for questions**, discussion/comments can be saved for after
-
- *Optional: 30 min post-lecture discussion (Use cases and “notes from the field”)*
 - *Optional: Office hours with TA (⭐ ABB Alumnus Bryce Klein)* 
 - *Optional: Small peer-groups for accountability and discussions outside lecture*

What You Can Expect...

Course Content

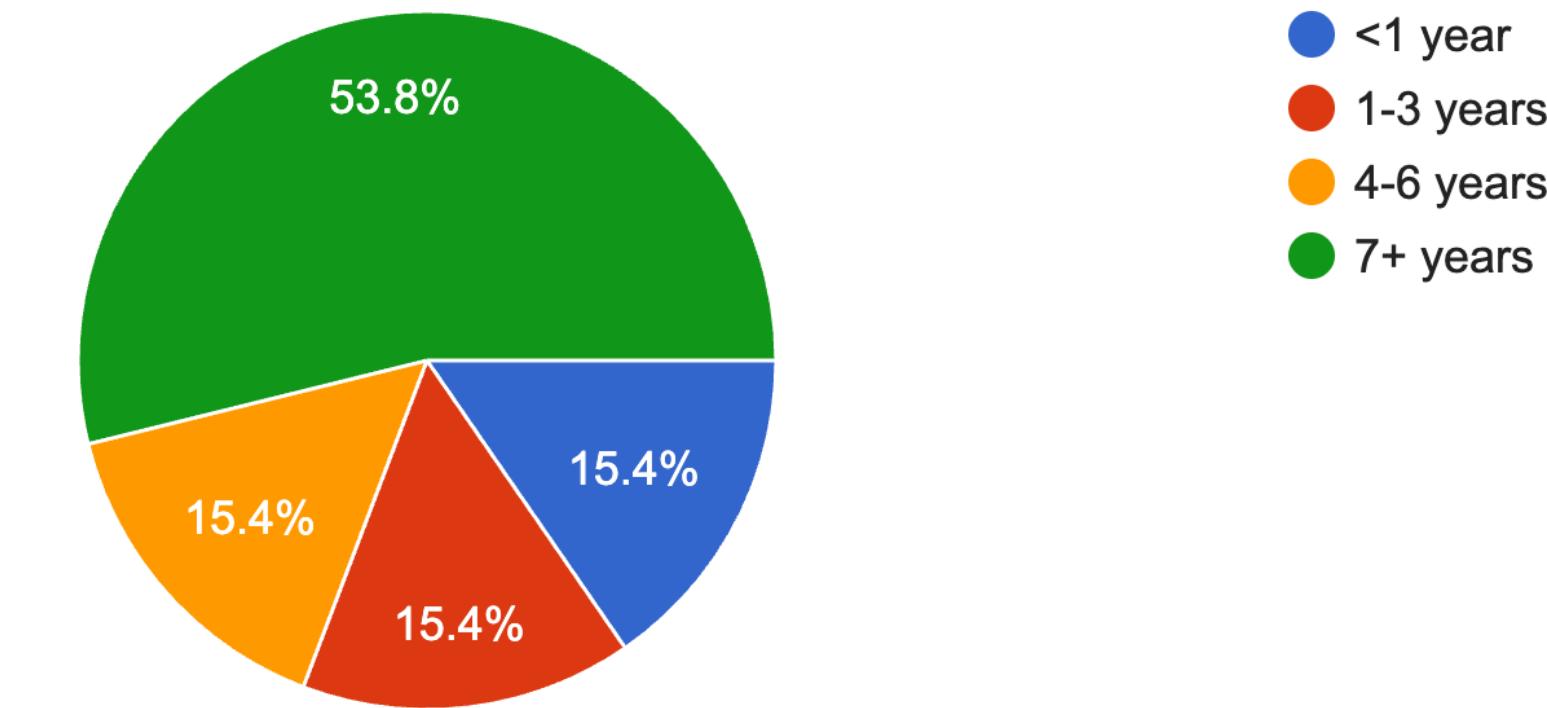
What is your current level of experience with AI/ML?

13 responses



How many years of programming experience do you have?

13 responses



- Conceptual discussions are widely accessible
- Code walkthroughs will be in Python

Pro tip: Follow along or use it as workshop time

How to get the most out of this course...

5 Ways to Maximize Your Value

1. Attend live sessions (or watch recordings)
2. Complete pre-work
3. Build (at least) 1 project!
4. Share your projects in portal and share feedback to others
5. Join a peer group and connect with fellow cohort members on LinkedIn

How can I get help outside lecture?

1. Post in learner community (Maven)
2. DM (via portal) or email me/TA
3. TA Office Hours

The screenshot shows a user interface for the 'AI Builders Bootcamp' learner community. On the left is a sidebar with navigation links: Home, Inbox, People, CHANNELS (admins, announcements, general, intros), questions (selected), projects, and MESSAGES +. Below the sidebar is a list of users: Adam Rosenkoetter and Ali. A red arrow points from the text 'Share questions' to the 'questions' button in the sidebar. Another red arrow points from the text 'DM anyone' to the 'questions' button in the main content area, which contains a placeholder 'Start a new thread...'. The main content area also includes a 'Share' icon and a date: Tuesday, November 5.

GitHub Repository

Slides and example codes shared here

The screenshot shows a GitHub repository page for 'AI-Builders-Bootcamp-4'. The repository is public. At the top, there are buttons for 'Pin' and 'Unwatch' with a notification count of 1. Below the header, there are buttons for 'main' (branch), '1 Branch' (branch count), '0 Tags' (tag count), a search bar ('Go to file'), and a code navigation bar ('Code'). The main content area displays a list of commits:

Author	File	Commit Message	Time Ago
ShawhinT	Update README.md	bdadeb7 · 22 minutes ago	3 Commits
	.gitignore	Update .gitignore	24 minutes ago
	LICENSE	Initial commit	24 minutes ago
	README.md	Update README.md	22 minutes ago

Below the commits, there is a file list with 'README' and 'Apache-2.0 license' selected. The 'README' file is shown in its entirety:

```
Al-Builders-Bootcamp-4

Code repository for AI Builders Bootcamp #4
```



Example code uploaded the night before each lecture

Slides uploaded immediately after lecture

An Introduction to AI

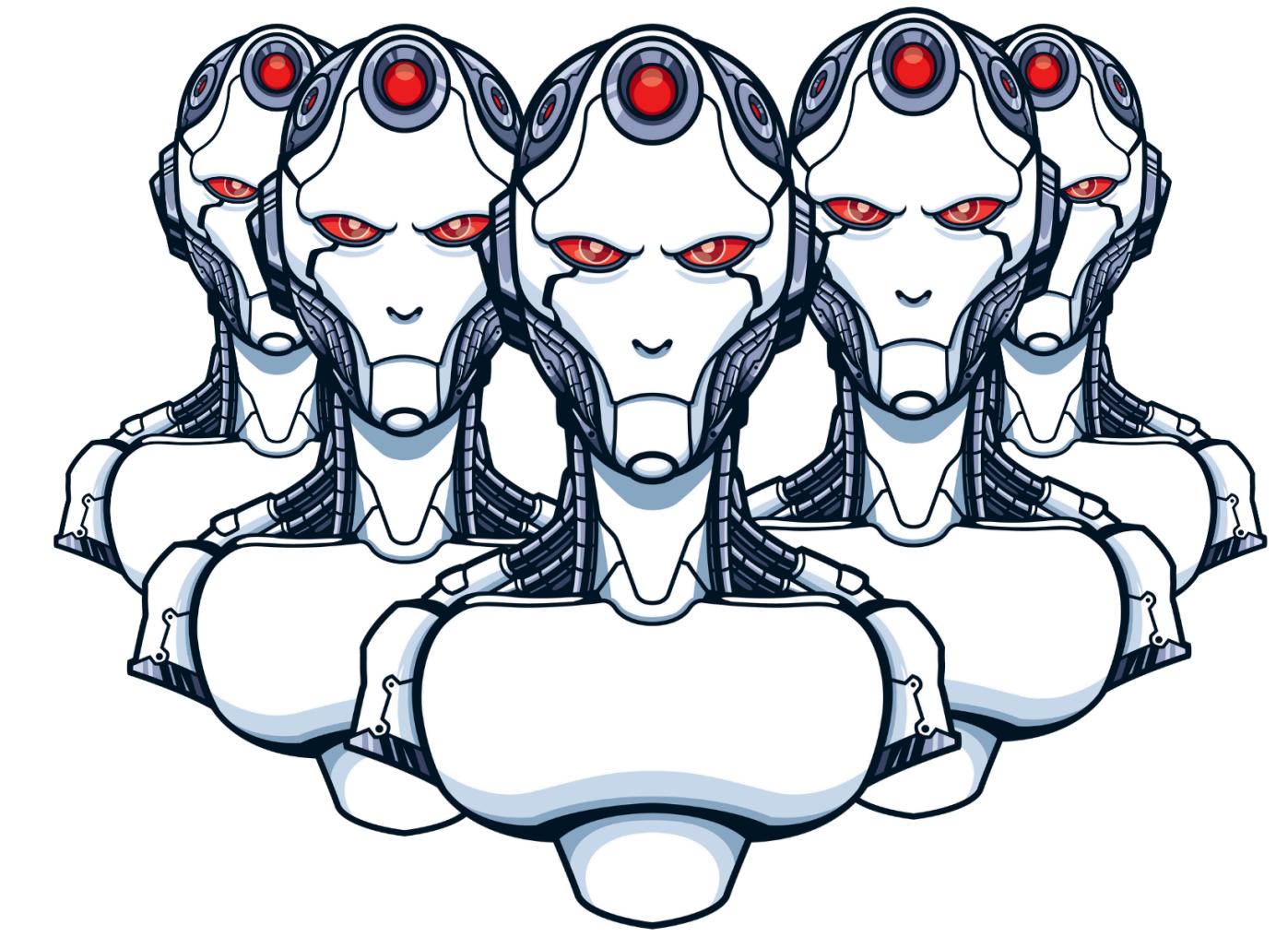
What is AI?



ChatGPT



AI Agents



Killer Robots

What is AI?

Artificial Intelligence

What is AI?

Artificial Intelligence

Made by humans

What is AI?

Artificial Intelligence

The ability to **solve problems** and **make decisions**

What is AI?

Artificial Intelligence

A computer's ability to solve problems and make decisions

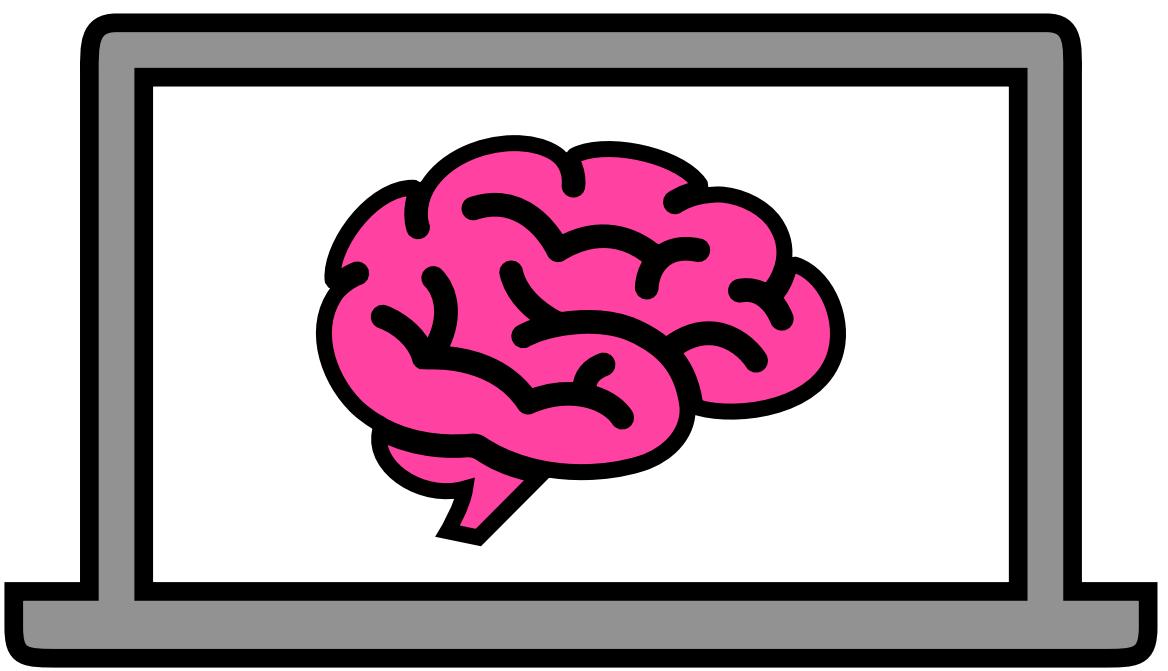
3 Types of AI



Software 1.0

Rules-based Systems

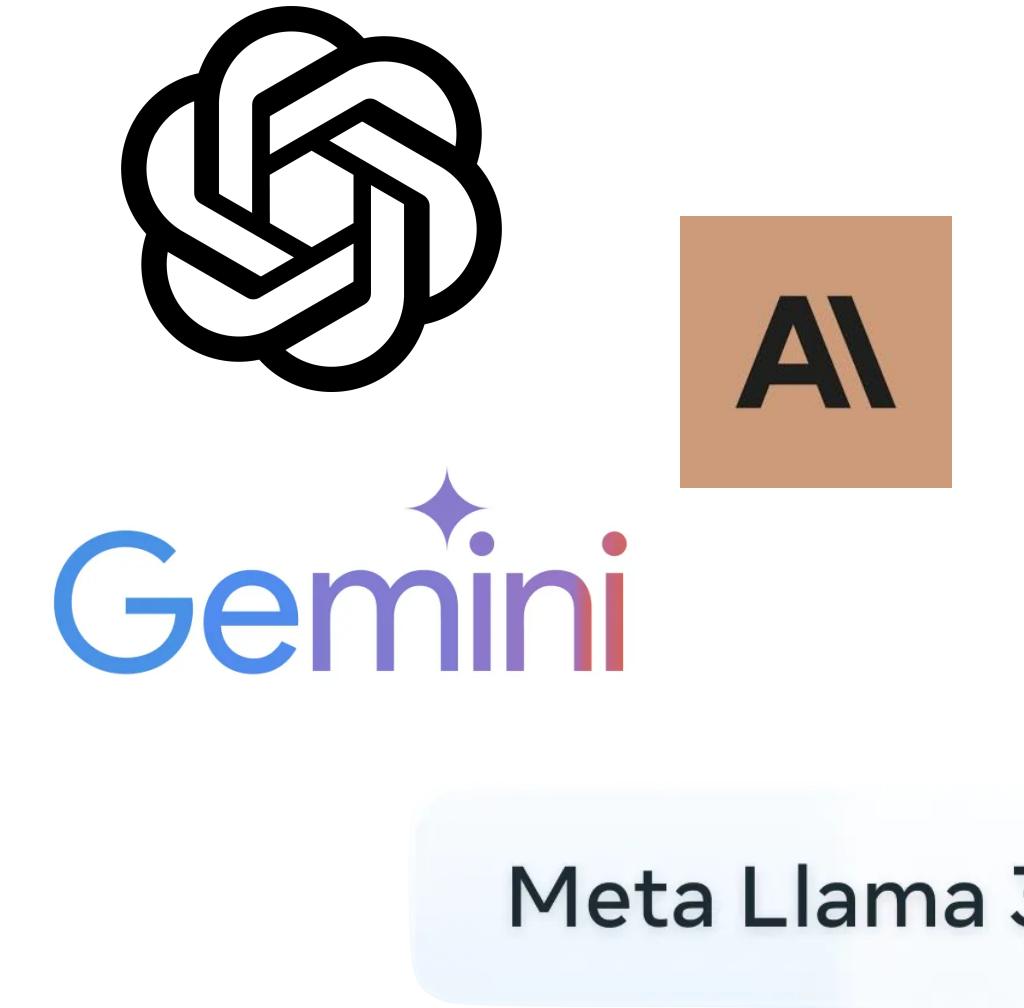
Inputs: **Code**



Software 2.0

Machine Learning

Data



Software 3.0

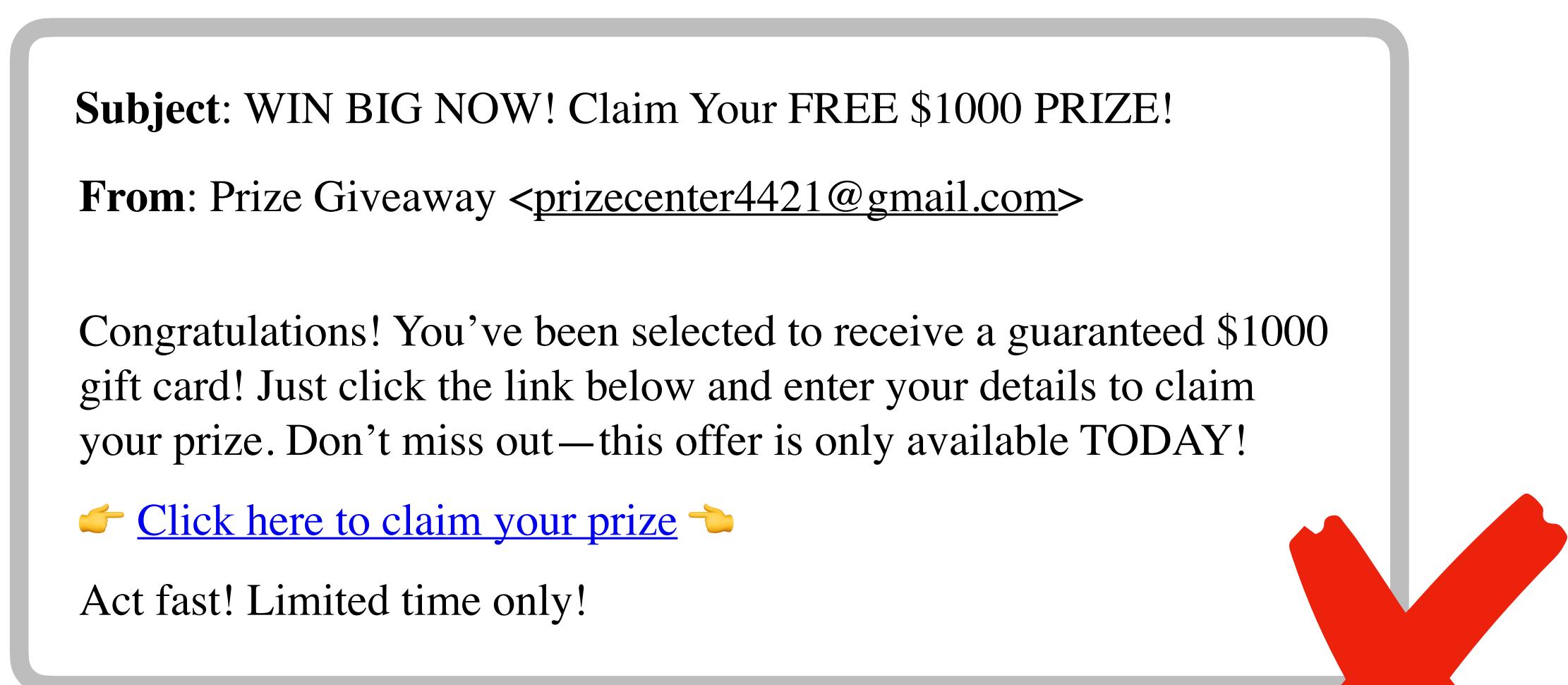
Generative AI

Context

Software 1.0

Rules are explicitly programmed into computer

Example: Spam Email Detection



Rules:

1. Subject contains: "free", "urgent", "win", "guarantee", "prize", "click here"
2. Sender has suspicious domain: e.g. ".ru", ".xyz", ".icu"
3. Message contains more than 3 links



Software 1.0

Rules are explicitly programmed into computer

Example: Spam Email Detection

Subject: Congratulations on Your New Offer! Special Opportunity Just for You

From: Service Center <rewards@service-center.com>

Hi there!

We're excited to let you know that you've been selected for an exclusive deal. This offer is designed to match your preferences, and it's available for a limited time.

Simply follow our instructions to learn more about how you can take advantage of this unique opportunity.

To proceed, you only need to confirm your email by visiting the link below:

[Confirm Email](#)

For more details, please check the terms on our website or feel free to reach out with any questions.

We look forward to hearing from you soon!

Best Regards,
The Service Center Team



**Creating robust
rules is challenging**

Rules:

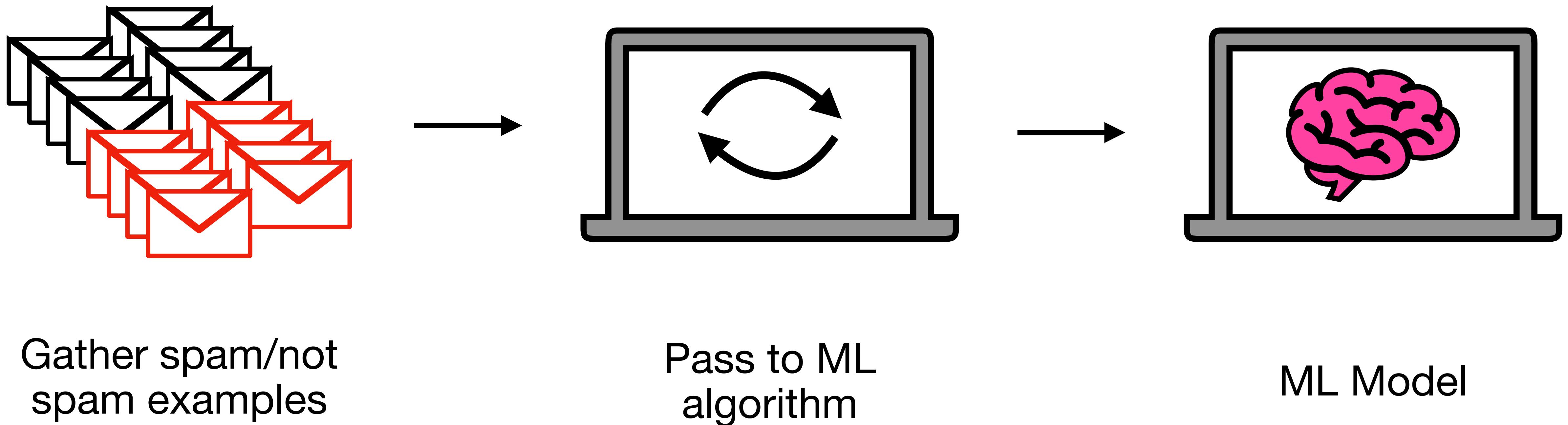
1. Subject contains: "free", "urgent", "win", "guarantee", "prize", "click here"
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Software 2.0

Programming computers by example

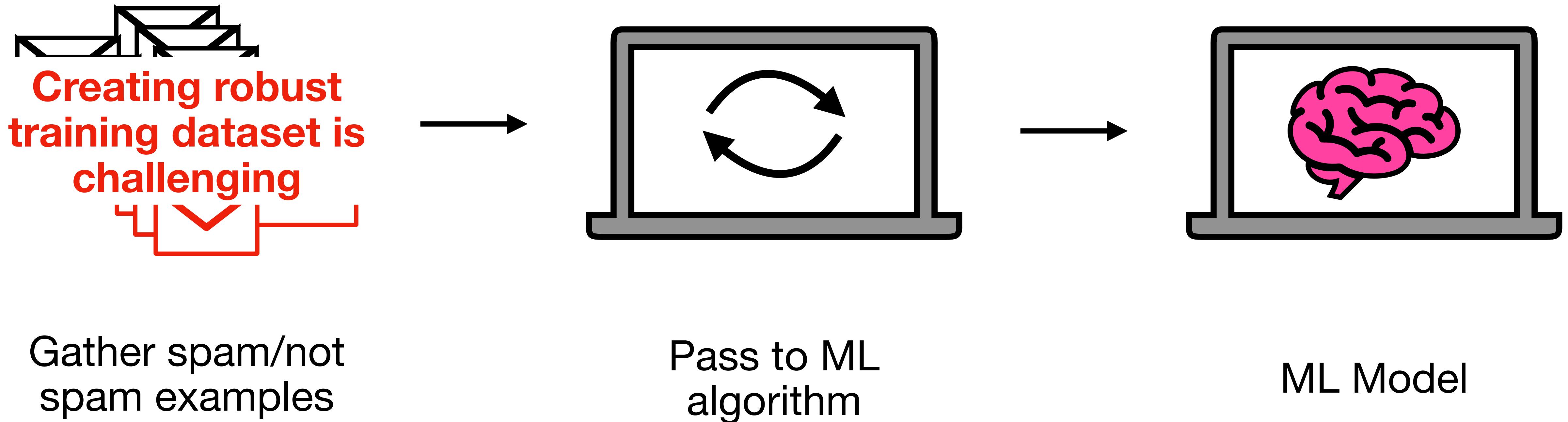
Example: Spam Email Detection



Software 2.0

Programming computers by example

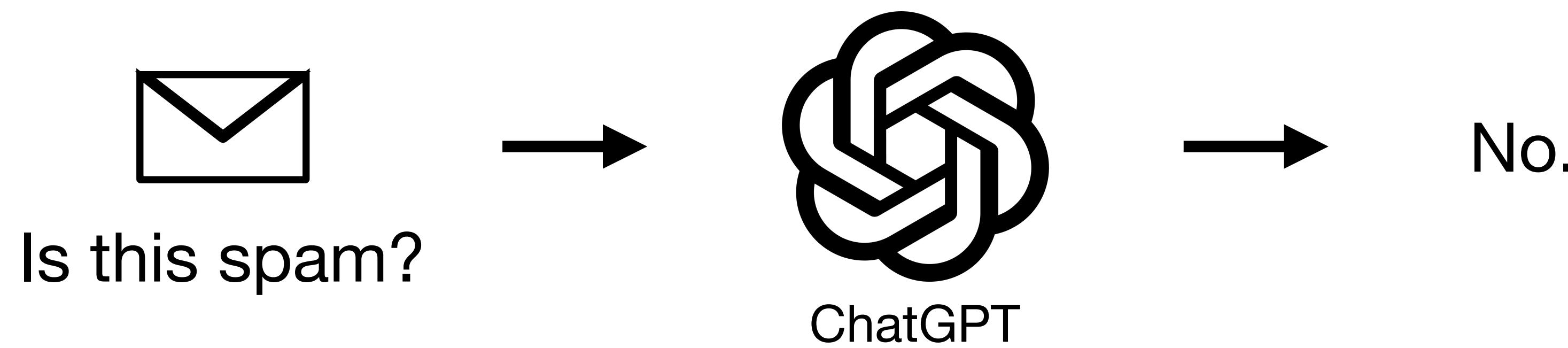
Example: Spam Email Detection



Software 3.0

Adapting generic (ML) models for specific use cases

Example: Spam Email Detection

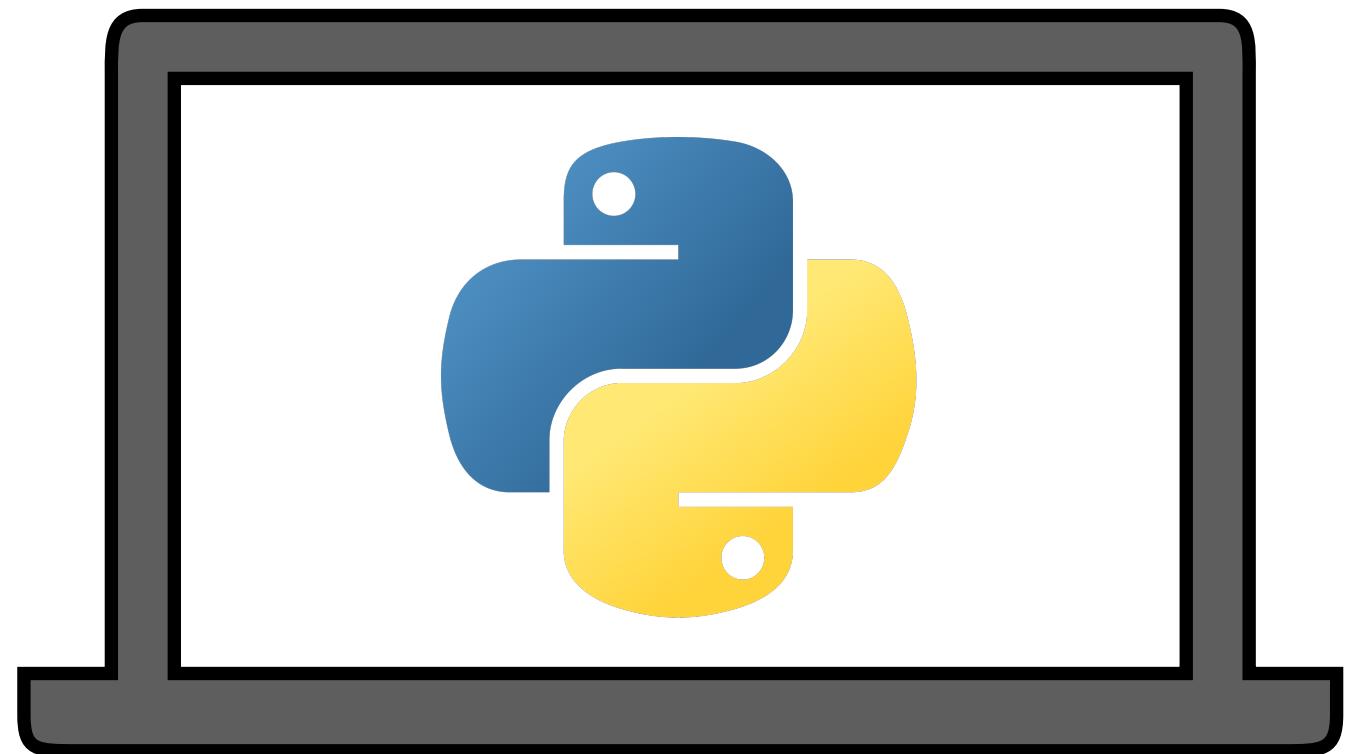


**Flexible but may have
suboptimal performance**

Software 1.0 (Python)

Python (Programming Language)

A way to give computers precise instructions to do things we can't (or don't want to) do



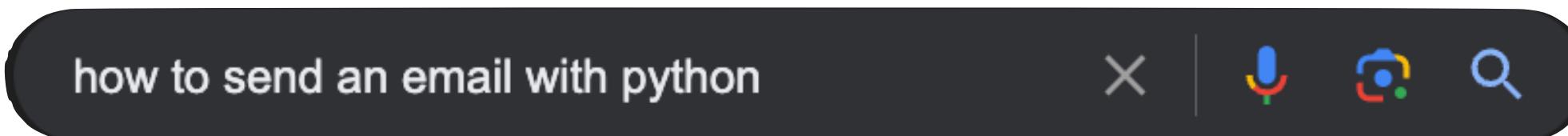
Why?

- 1) Easy to learn (high-level language)
- 2) Strong community support
- 3) Industry standard for AI and ML
- 4) Robust selection of libraries

Learning Python is Easier Than Ever

Thank you Google + ChatGPT

Google



Stack Overflow
<https://stackoverflow.com> › questions › how-to-send-an... :

How to send an email with Python?

I recommend that you use the standard packages `email` and `smtplib` together to [send email](#). Please look at the following example (reproduced ...)

[How to send an email using python after Google's policy ...](#) Jun 2, 2022
[What is the proper way to ACTUALLY SEND mail from \(Python ...](#) Jun 5, 2018
[Receive and send emails in python - Stack Overflow](#) Dec 8, 2008
[How to send an email without login to server in Python](#) Apr 14, 2019
[More results from stackoverflow.com](#)

Python Docs
<https://docs.python.org> › library › email.examples.html :

email: Examples – Python 3.12.5 documentation

Here are a few examples of how to use the `email` package to read, [write](#), and [send simple email](#) messages, as well as more complex MIME messages.

Wisdom of the crowd i.e. Stack Overflow

ChatGPT (or the like)

how to send an email with python

To send an email with Python, you can use the built-in `smtplib` library along with the `email` package. Below is a basic example of how to send an email using these libraries.

Steps:

1. Set up the email content: Use the `email.mime` classes to format the email.
2. Use `smtplib` to send the email: This handles the connection to the mail server.

Code Example:

```
python
Copy code

import smtplib
from email.mime.multipart import MIMEMultipart
from email.mime.text import MIMEText

# Email settings
sender_email = "your_email@example.com"
receiver_email = "receiver_email@example.com"
password = "your_password"
subject = "Test Email from Python"
body = "This is a test email sent from Python!"
```

(Ask follow-up questions)

Why Learn Python Given No-code Tools?

Both have their place...

No-code Tools

Easy to use

Fast Prototyping + Deployment

Limited Customization

Limited Performance Potential

Python

Startup Cost

Longer Development Time

Fully Customizable

SOTA Performance Potential

Examples

Example 1

Scraping AI Job Board with Python (Motivation)

Motivation

Trying to get an AI job and...

- ... looking for top paying roles
- ... seeking for AI forward companies
- ... don't know what skill to highlight
- ... want to keep up with industry trends

Example 1

Scraping AI Job Board with Python (Problem)

Problem

Manually reading job postings is tedious and difficult to analyze rigorously

Jobs and Talents in AI, ML, Data Science and Big Data. 🧠🐱💻🤖🚗🚀

Analyst, Architecture, Big Data, Computer Vision, Consulting, Data Science, Deep Learning, Engineering, Generative AI, Leadership, Machine Learning, MLOps, NLP, Product, Research, Visualization

Cities, Countries, Regions / Remote, Job types

Keywords, Experience, Salary, Perks / Benefits

Reset, Share, Subscribe, Search

17,559 jobs found (last 30 days)

murmuration
Staff Software Engineer Featured
APIs, Architecture, AWS, CI/CD, Computer Science, Docker, Engineering, +11, Career development, Equity / stock options, Flex hours, Flex vacation, Gear, +7

Thales
Ingénieur en Deep Learning F/H
Classification, Computer Science, Computer Vision, Deep Learning, GPU, Machine Learning, MLOps, +4

Remote - anywhere in the U.S.
Full Time, Senior-level
USD 135K - 165K

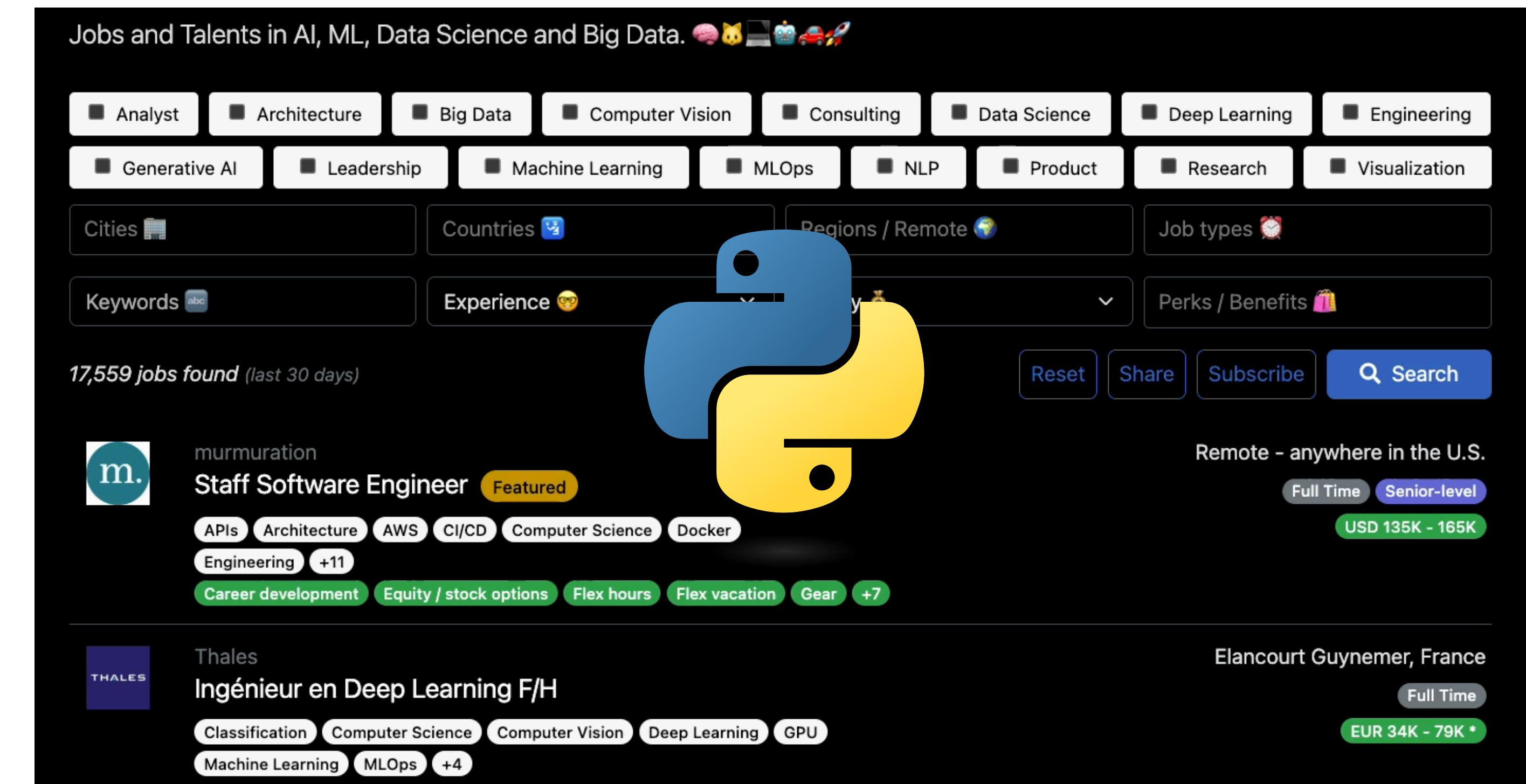
Elancourt Guynemer, France
Full Time
EUR 34K - 79K *

Example 1

Scraping AI Job Board with Python (Solution)

Solution

Automatically extract job data from the web using Python



Example 1

Scraping AI Job Board with Python (Code Walkthrough)



Goals

- Share my “0-to-1” approach
- Demonstrate how I use LLMs for coding
- Show how I debug and learn on-the-fly

Example 2

Top AI Jobs Dashboard with Plotly Dash (Problem)

We got the data we needed...

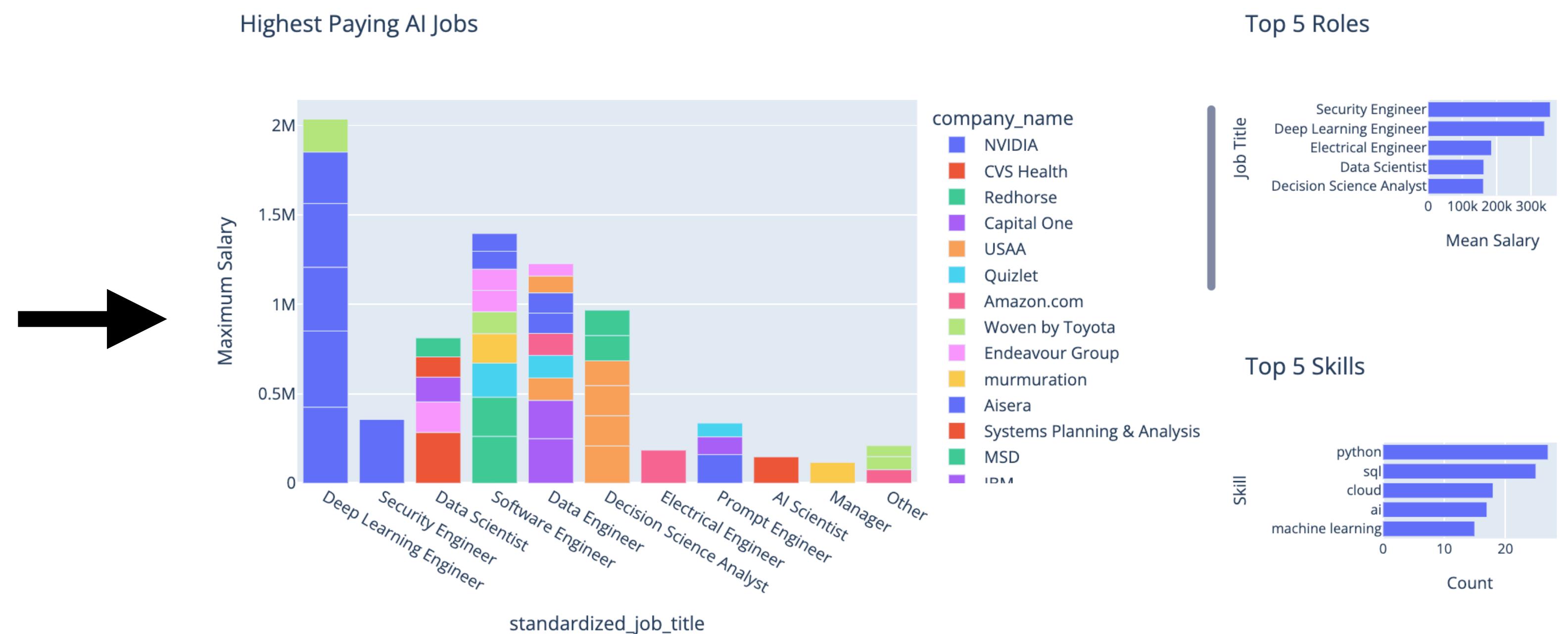
Job Title	Company	Description	Salary

... but not the insights

Example 2

Top AI Jobs Dashboard with Plotly Dash (Solution)

Job Title	Company	Description	Salary

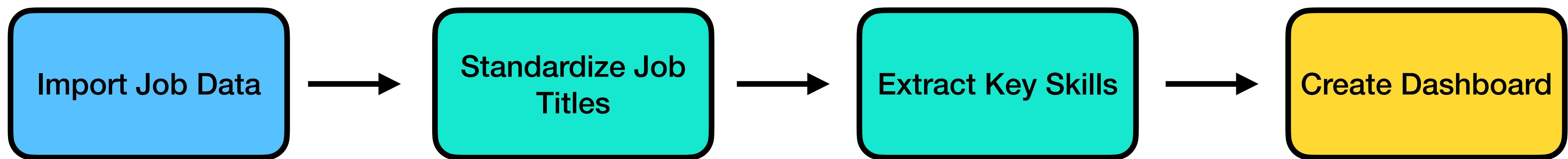


Data

Interactive Dashboard

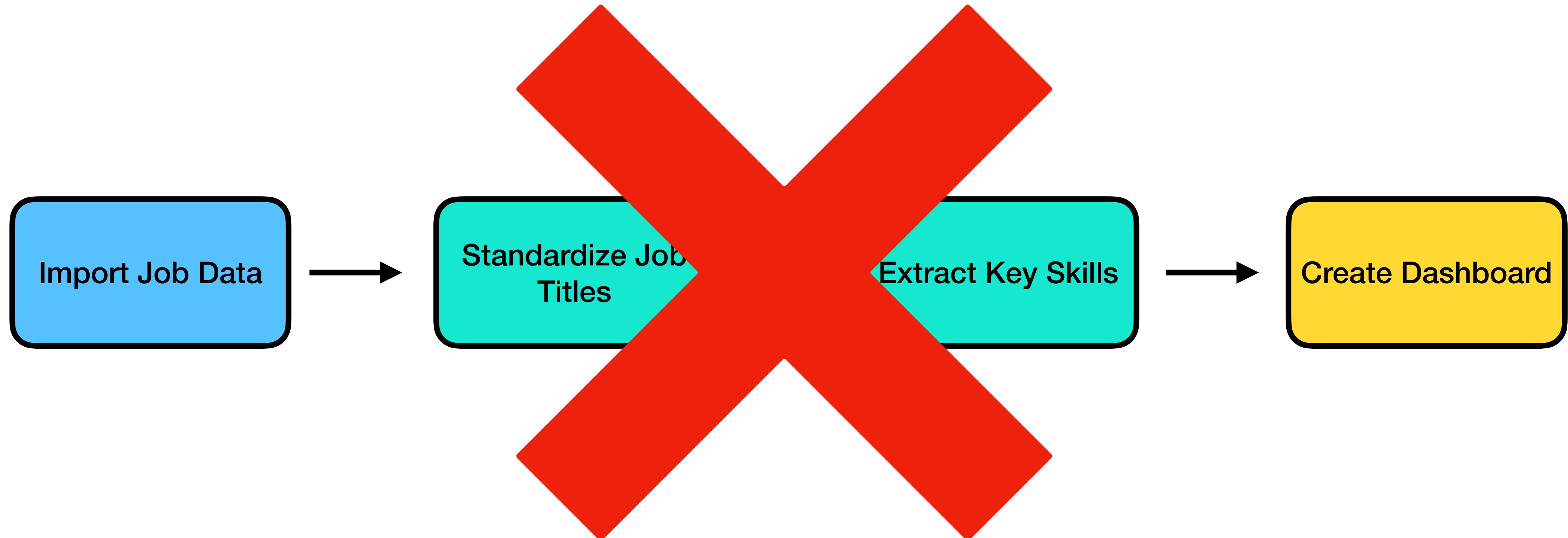
Example 2

Top AI Jobs Dashboard with Plotly Dash (Workflow)



Example 2

Vibe Coding Top AI Jobs Dashboard 😎 (Workflow)



Example 2

Vibe Coding Top AI Jobs Dashboard (Code Walkthrough)

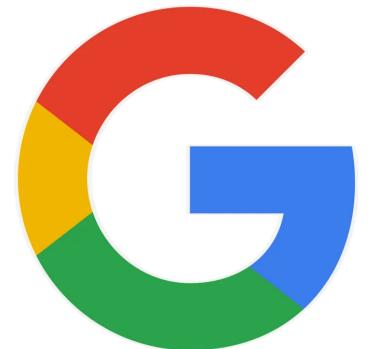


Warning for AI Coding

Beware of technical debt!

Less Debt

Slower 🐌



More Debt

Faster 🔥



Coding With No Wifi

Coding with Google

ChatGPT

Vibe Coding with Cursor

Best choice depends on your
experience and **use case**

More Examples

From past cohorts...

- 1) Automated Email Sender
- 2) Automated Report Builder and Emailer
- 3) Top AI Job Dashboards with Plotly Dash

AI-Builders-Bootcamp-4

Code repository for AI Builders Bootcamp #4

Past Cohorts: [Cohort 1](#) | [Cohort 2](#) | [Cohort 3](#)

Homework 1

Project

Build a Python Automation (using only Software 1.0)

Pre-work

Session 2: Intro to LLMs

Session 2: Prompt Engineering

Session 2: OpenAI API

References

- [1] [AI for Business: A \(non-technical\) introduction](#)
- [2] [Software 2.0 by Andrej Karpathy](#)
- [3] [But What is AI... really? by Shaw Talebi](#)
- [4] [Python QuickStart for People Learning AI \[Mini-Course\]](#)

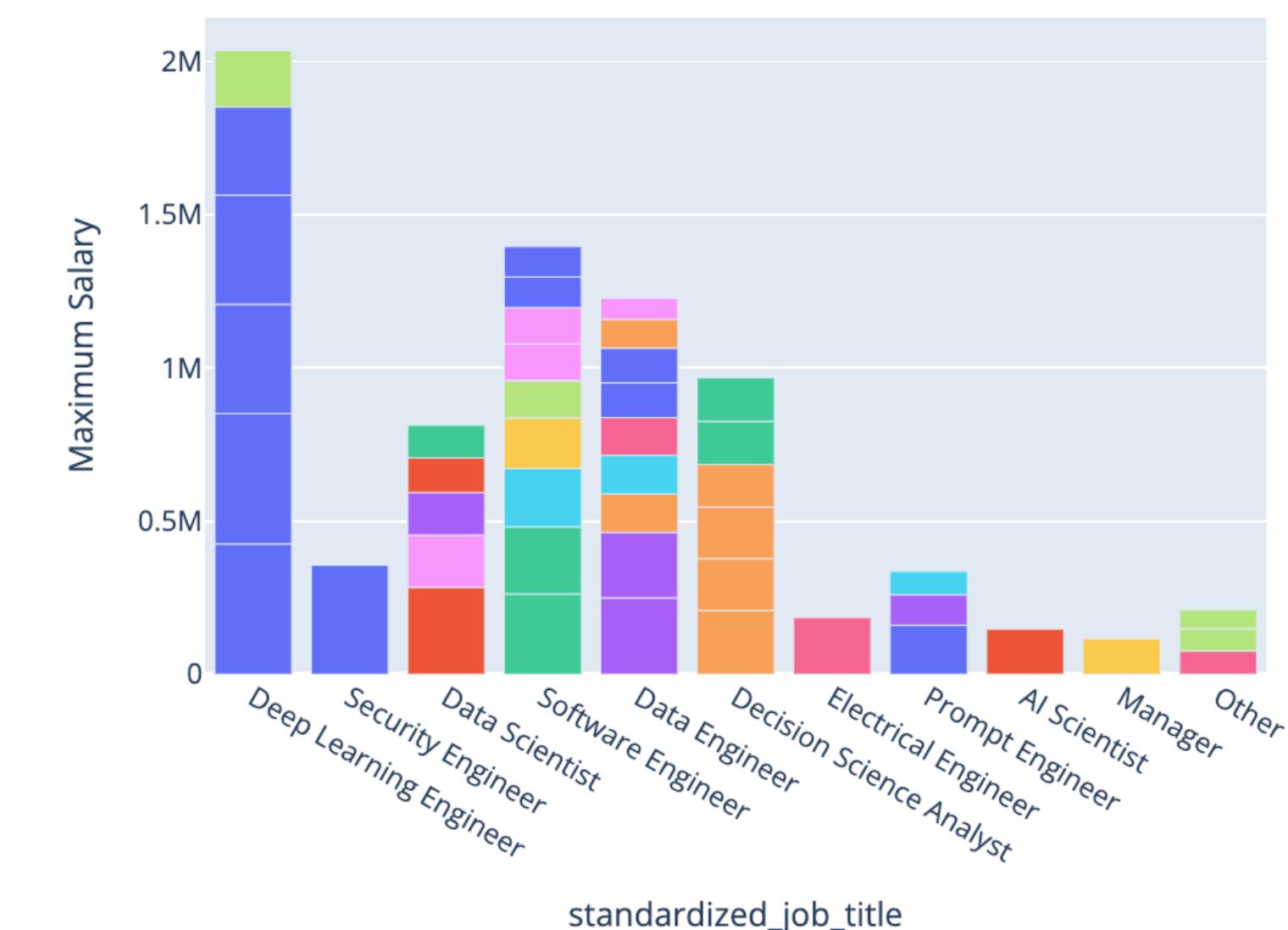
Example 2

Top AI Jobs Dashboard with Plotly Dash (Solution)

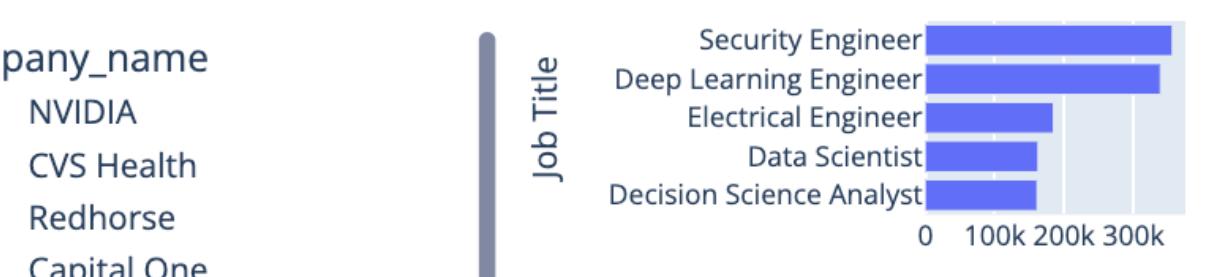
Job Title	Company	Description	Salary



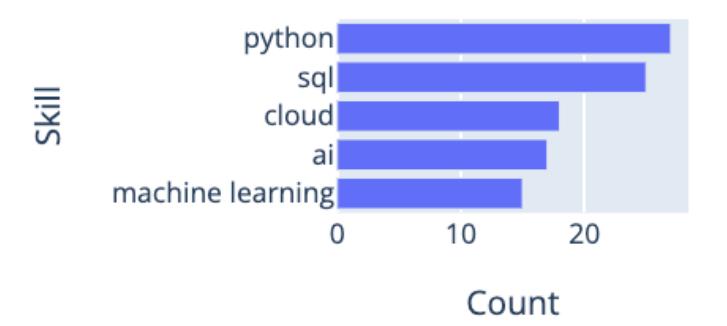
Highest Paying AI Jobs



Top 5 Roles



Top 5 Skills



Data

Interactive Dashboard

Example 2

Top AI Jobs Dashboard with Plotly Dash (Workflow)

