

ABB - Session 1

Introduction, Software 1.0, Automation, Python

Shaw Talebi

Today's Session

1. About ↗

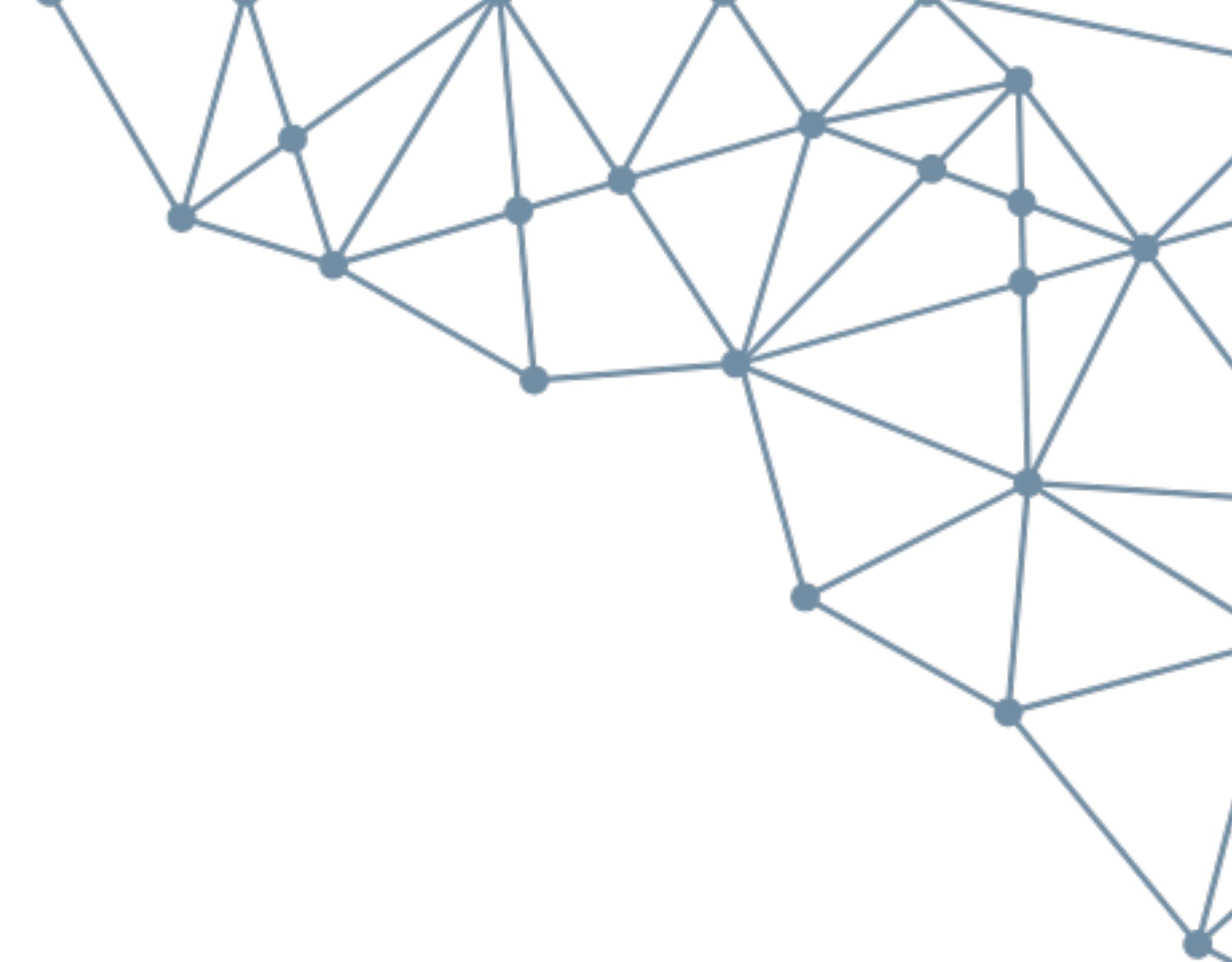
- 1.1. About Me
- 1.2. Course Expectations & Logistics

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 (from scratch)
- 3.2. Top AI Jobs Dashboard



About

About Me



Physics PhD
AI Researcher

2018



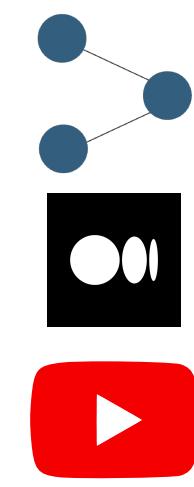
Data Scientist

2022



Data Entrepreneur

2023



Helped over 100 clients

15k followers

~40k subscribers



What You Can Expect...

Course Overview

Week	Sessions	Notes
Week 1	Session 1: Intro to AI, Software 1.0, Python	*We are here
Week 2	Session 2: Software 2.0, Data Engineering, ML	
Week 3	Session 3: Software 3.0, LLMs, Prompt Engineering	
Week 4	<i>No lecture</i>	
Week 5	Session 4: Software 3.0, RAG, Text Embeddings	**Optional podcast on LLM Solution Development (TBA)
Week 6	Session 5: Software 3.0, Fine-tuning	
Week 7	Session 6: AI Project Management	

More advanced

Weekly Sessions, Friday at 10AM CST

What You Can Expect...

Session Logistics

- **Weekly Sessions, Friday 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) ~15 pre-lecture QA, 30 min post-lecture discussion

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

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

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

4 Levels of Value

1. Attend live sessions (or watch recordings)
2. Complete pre-work
3. Share your projects in portal and share feedback to others
4. Connect with classmates outside class

How can I get help outside lecture?

1. Post in learner community (Maven)
2. DM (via portal) or email me
3. 1:1 tutoring calls (discounted)

The screenshot shows a Slack channel named "AI Builders Bootcamp". On the left is a sidebar with channels: Home, Inbox, People, CHANNELS (admins, announcements, general, intros), questions (highlighted with a red arrow), projects, and MESSAGES + (Adam Rosenkoetter, Ali). On the right, a message from Shaw Talebi is displayed: "A good question came in via the pre-course survey that I wanted to share here. Q: Do I get help outside of classroom if I'm stuck (coding, etc)? A: Beyond asking questions during class, there are two ways to get additional help. 1. Post in the learner community. This is the best place to ask questions outside class because everyone can benefit from it. 2. DM/Email me. If you prefer to keep the question private, you can always DM via Maven or email me (shawhintalebi@gmail.com)". Below the message is a "Share questions" button and a "DM anyone" button, both highlighted with red arrows.

GitHub Repository

Slides and example codes share here

The screenshot shows a GitHub repository page for 'AI-Builders-Bootcamp-2'. The repository is public and has 1 branch and 0 tags. The main branch has 8 commits. The repository was created by ShawhinT and updated 2 weeks ago. The repository contains files like 'README', 'LICENSE', '.gitignore', 'lightning-lesson', and 'README.md'. The 'About' section describes it as a code repository for AI Builders Bootcamp #2, featuring a Readme, MIT license, and activity stats. The 'Releases' and 'Languages' sections are currently empty.

AI-Builders-Bootcamp-2

Code repository for AI Builders Bootcamp #2. Starting on Jan 10, 2025!

See Cohort 1 examples [here](#).

Course homepage on Maven: <https://maven.com/shaw-talebi/ai-builders-bootcamp>



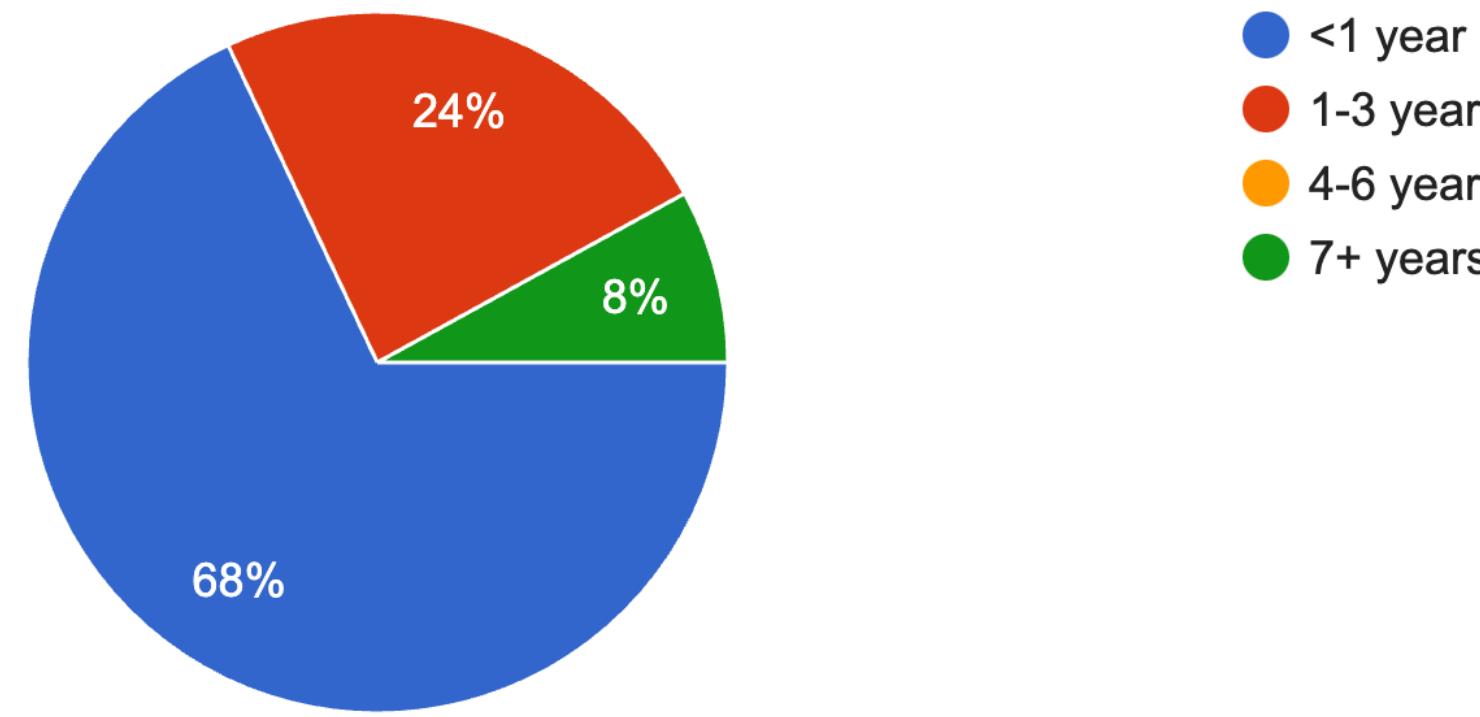
Example code uploaded the night before each lecture

Slides uploaded immediately after lecture

Note on Diversity

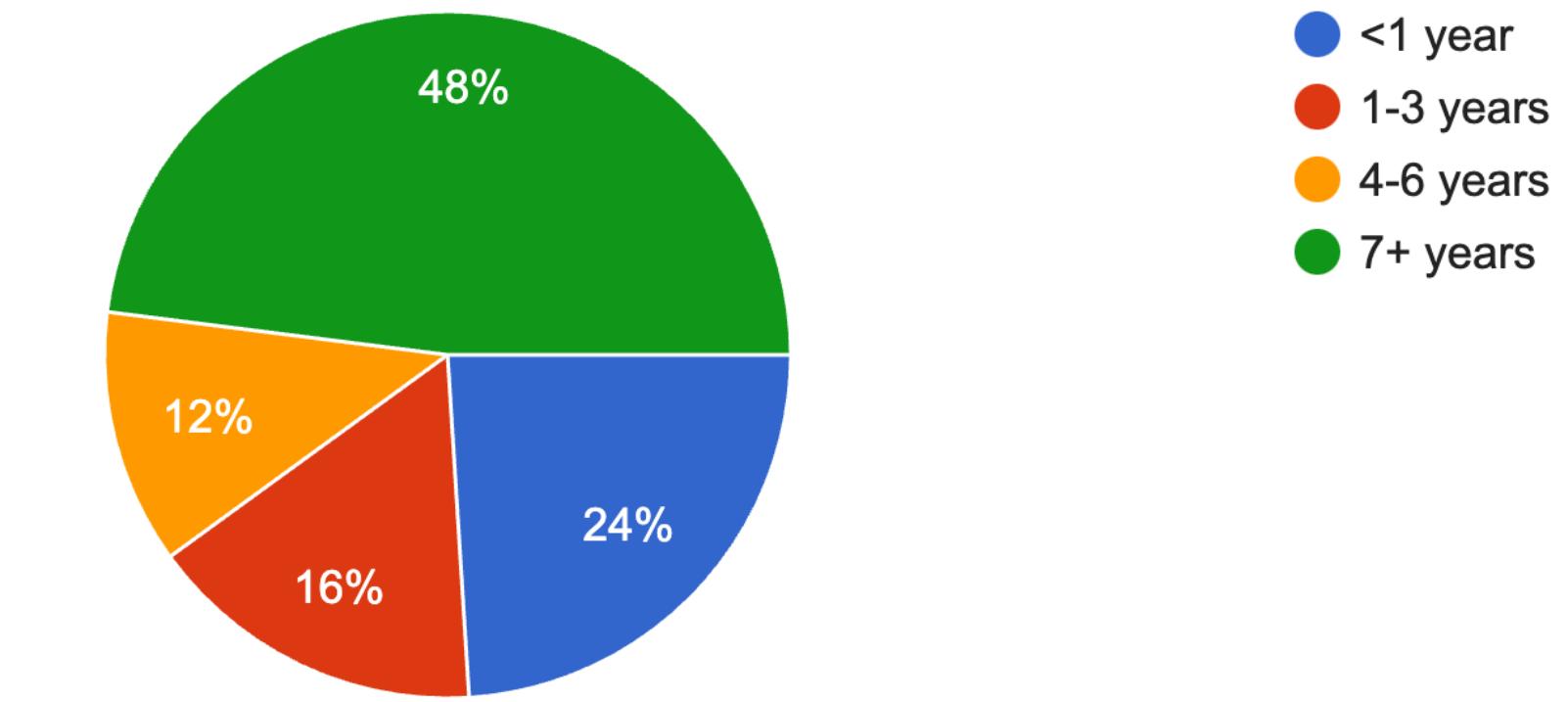
What is your current level of experience with AI/ML?

25 responses



How many years of programming experience do you have?

25 responses

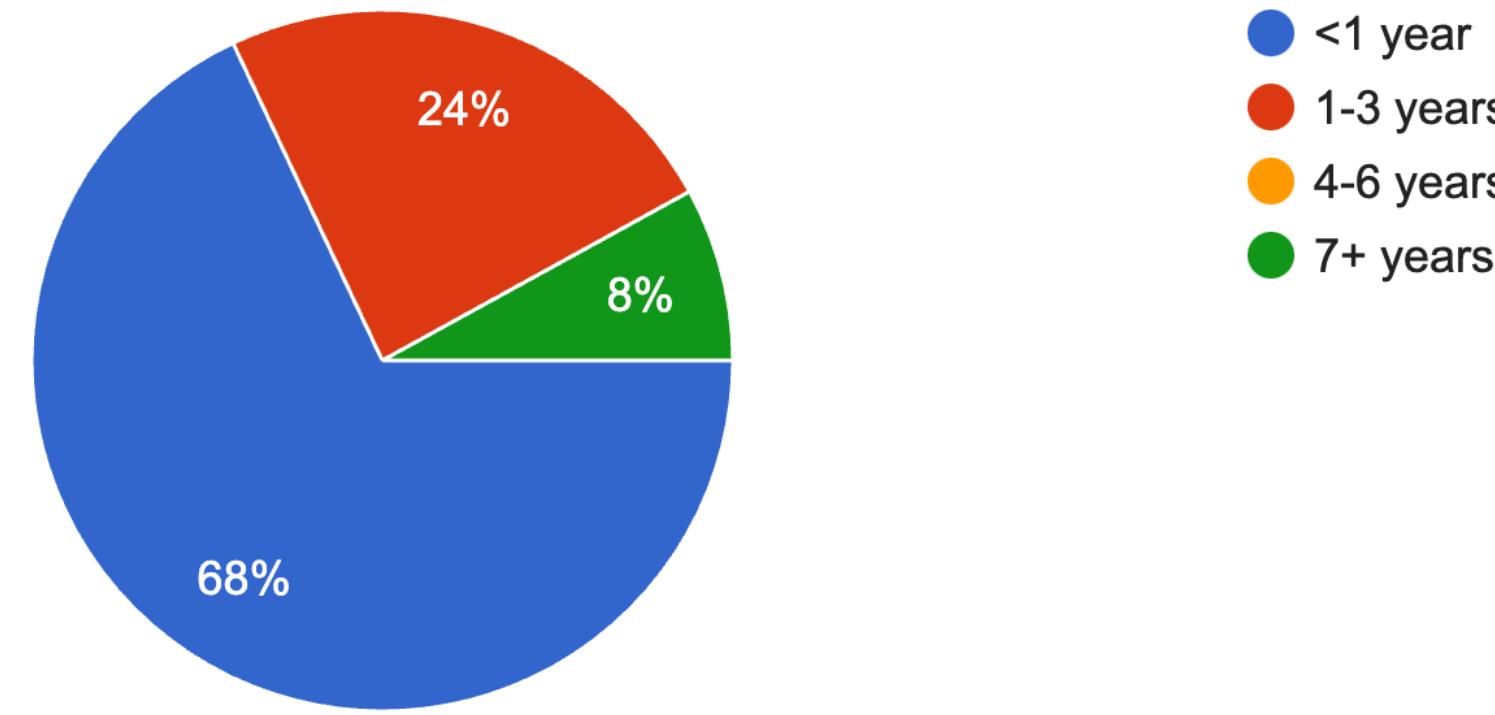


- Explanations are meant to be widely accessible
- Code walkthroughs can get technical
- Experiment for technical slides

Note on Diversity

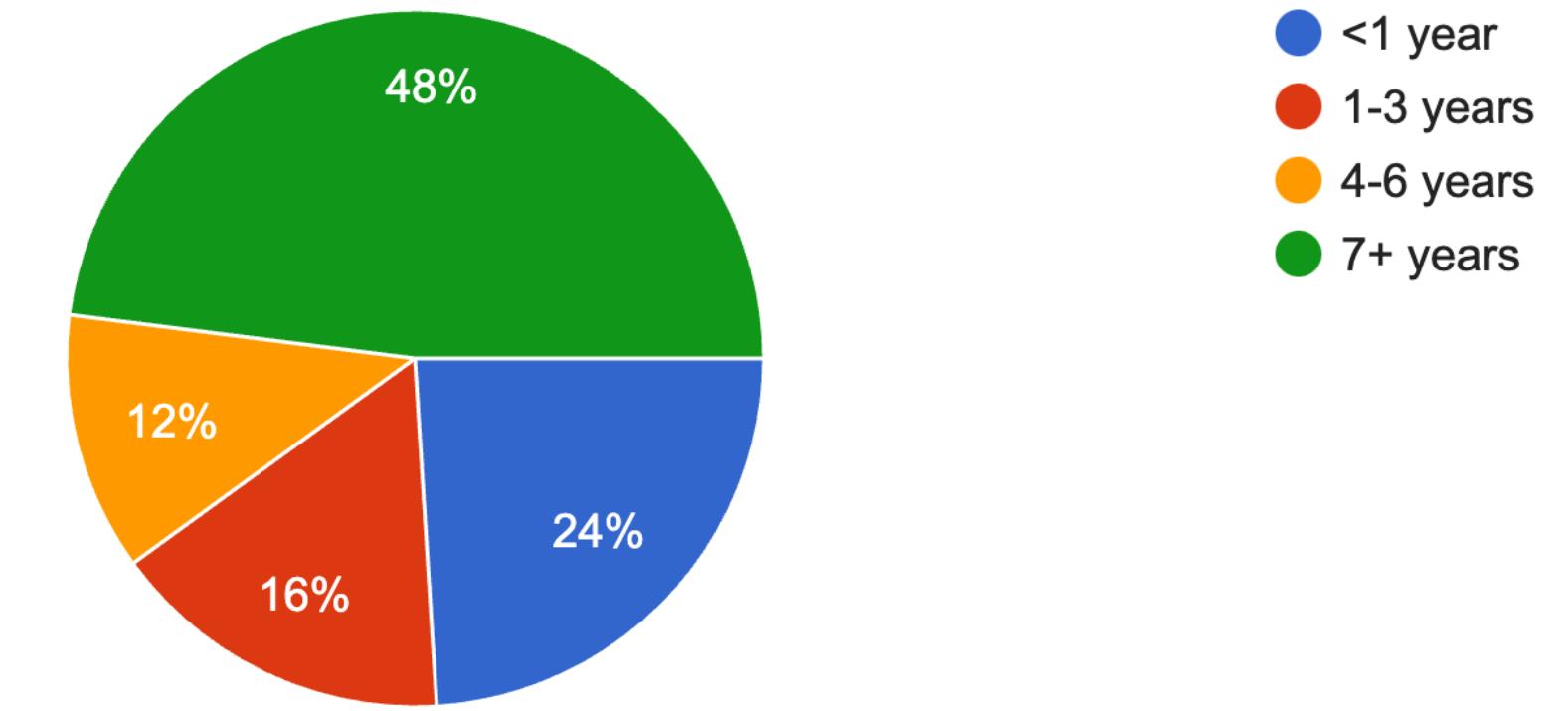
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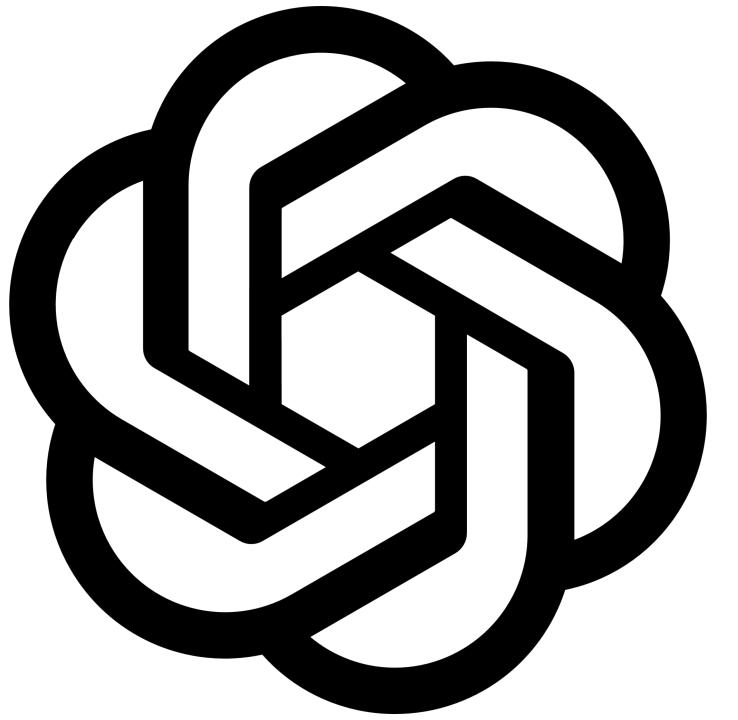


- Explanations are meant to be widely accessible
- Code walkthroughs can get technical
- Experiment for technical slides

If this course doesn't turn out to be the right fit, happy to give a “no questions asked” refund by Jan 24

An Introduction to AI

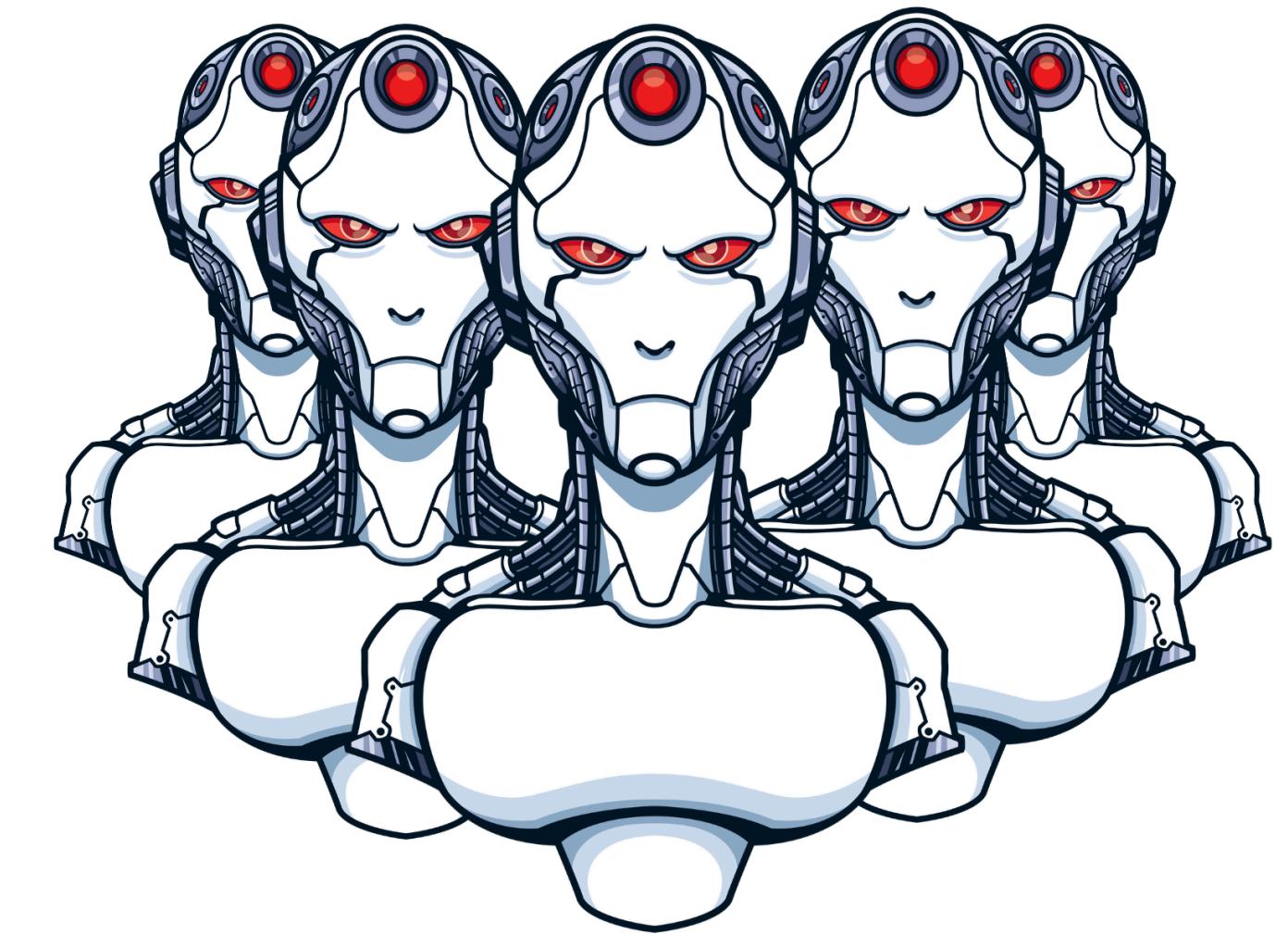
What is AI?



ChatGPT



AI Art



Killer Robots

Artificial Intelligence

Artificial Intelligence

Made by humans

Artificial Intelligence

The ability to solve problems and make decisions

Artificial Intelligence

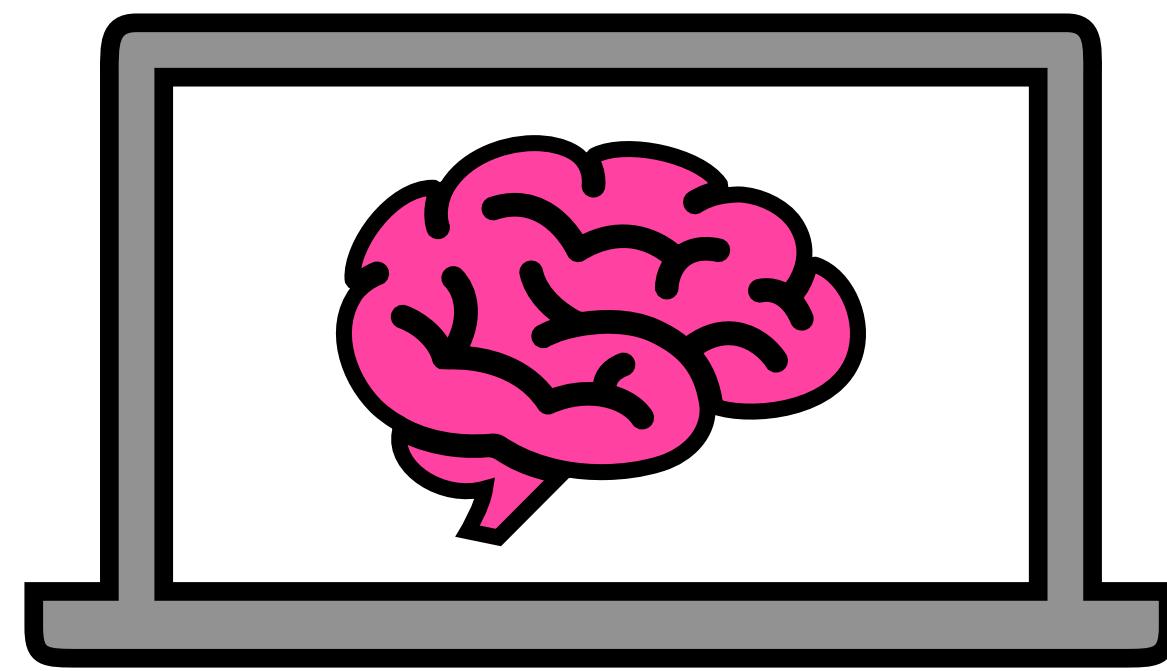
A computer's ability to solve problems and make decisions

3 Types of AI



Software 1.0

Rules-based Systems



Software 2.0

Machine Learning



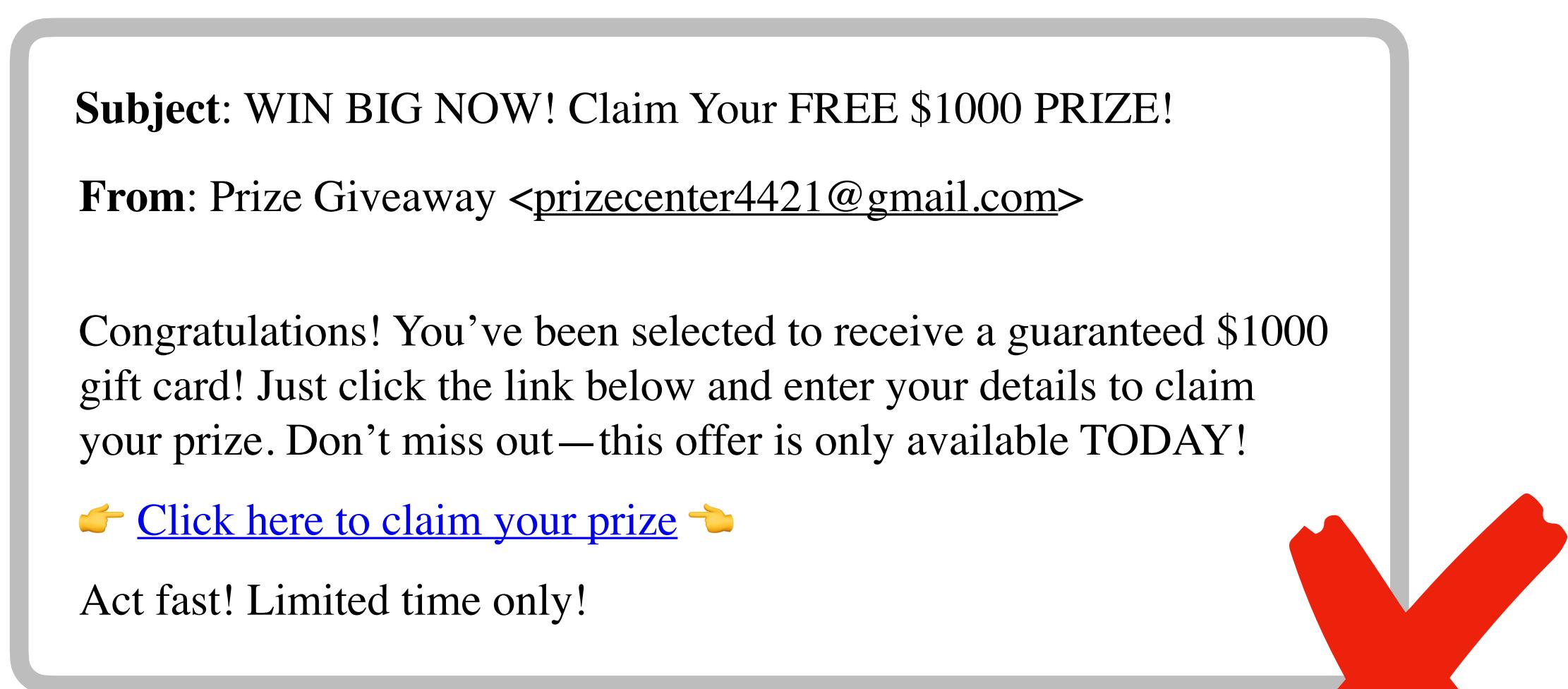
Software 3.0

Generative AI

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:

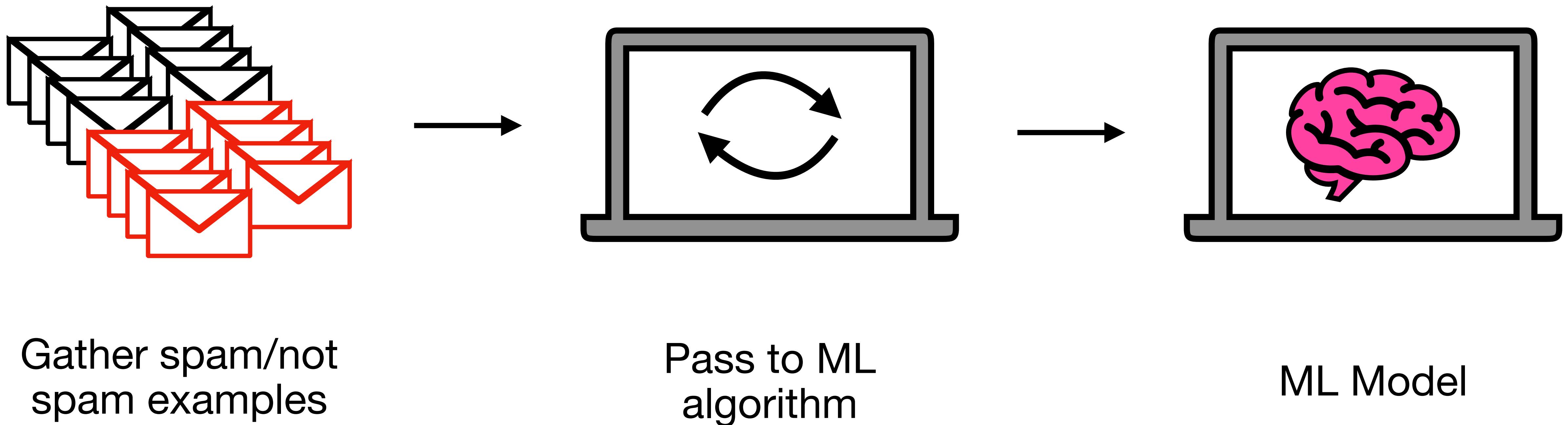
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Software 2.0

Programming computers by example

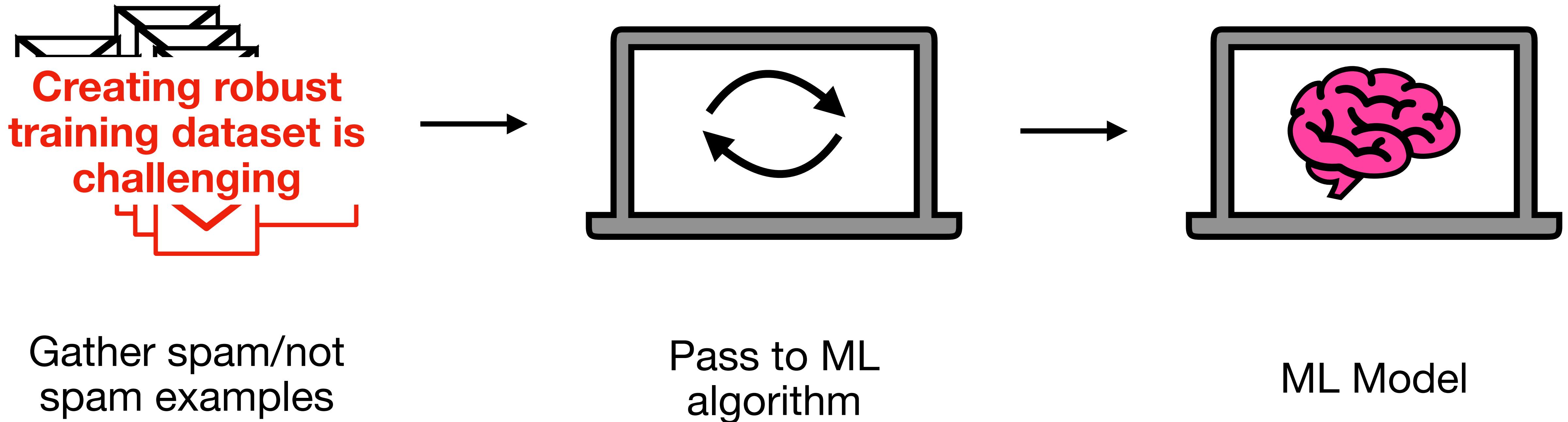
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Software 2.0

Programming computers by example

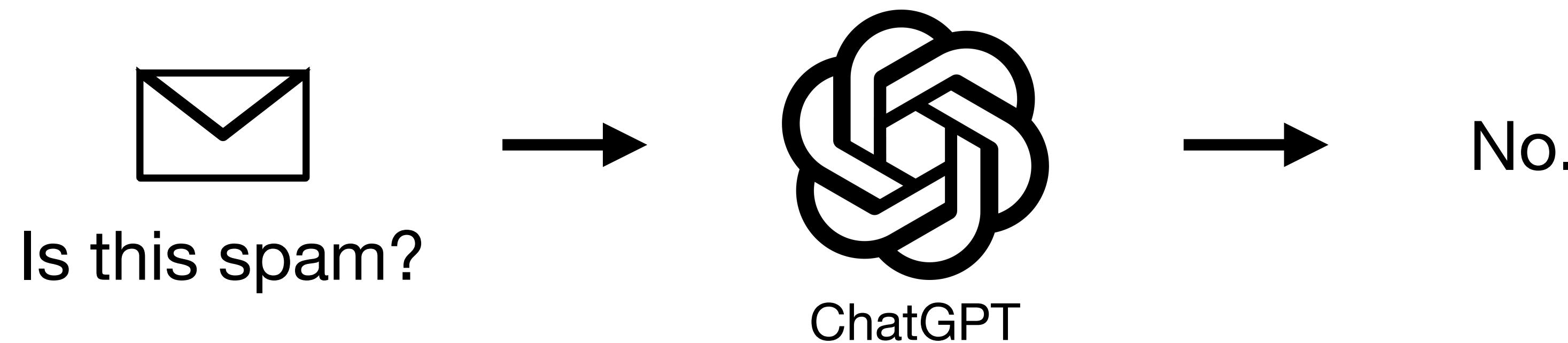
Example: Spam Email Detection



Software 3.0

Adapting generic models for specific use cases

Example: Spam Email Detection

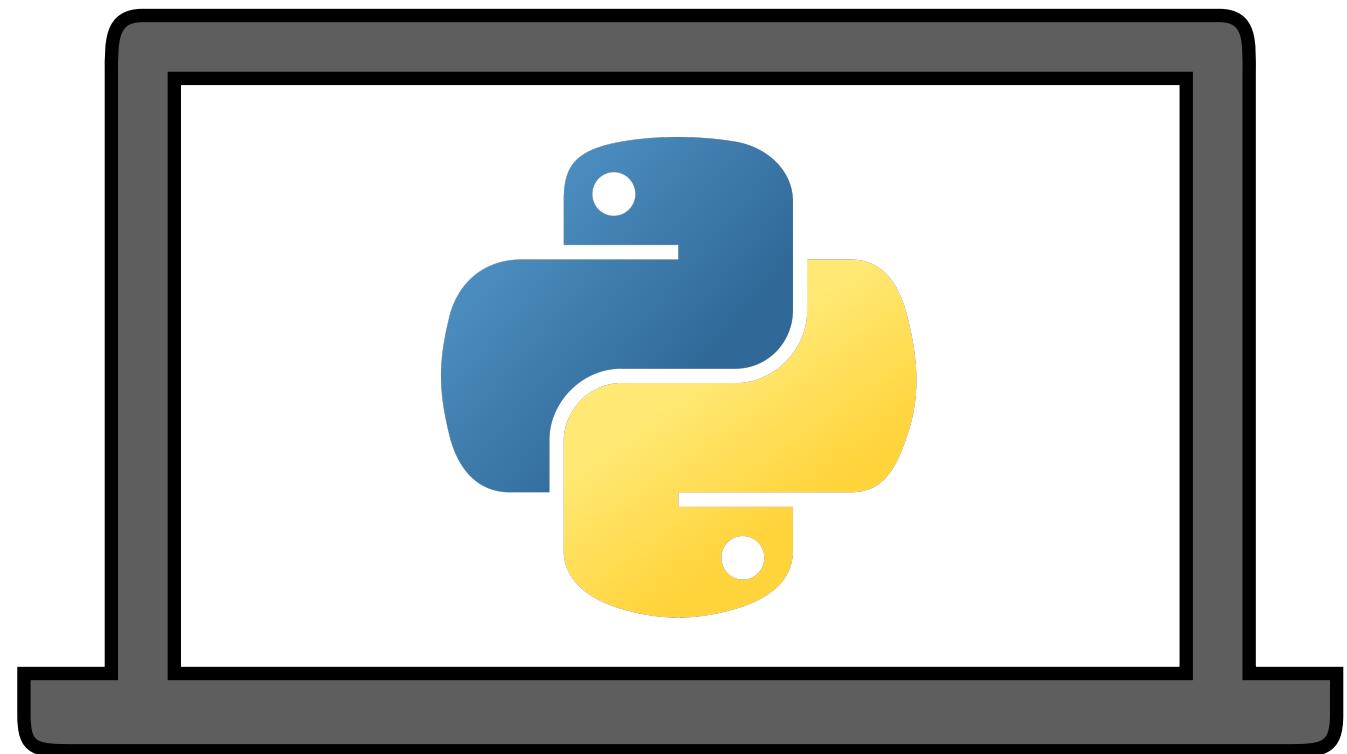


**Easy but may have
suboptimal performance**

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



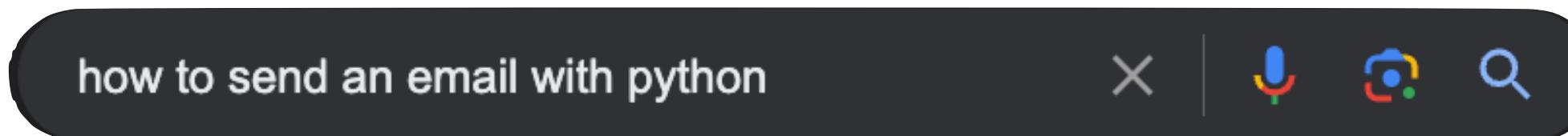
Why?

- 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.

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!"
```

Wisdom of the crowd i.e. Stack Overflow

(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

17,559 jobs found (last 30 days)

Reset Share Subscribe Search

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

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

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

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

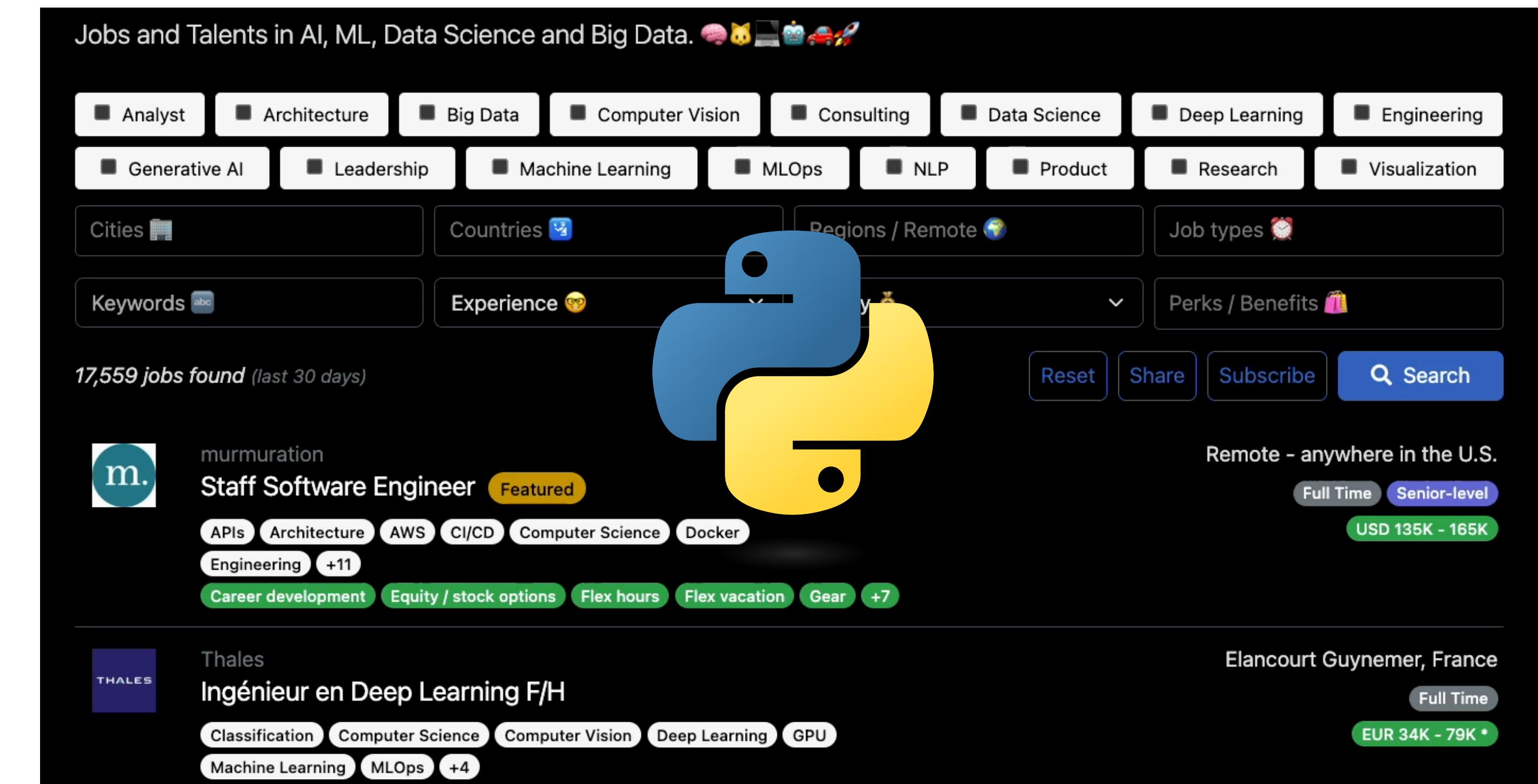


Example 1

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 idea to building 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...

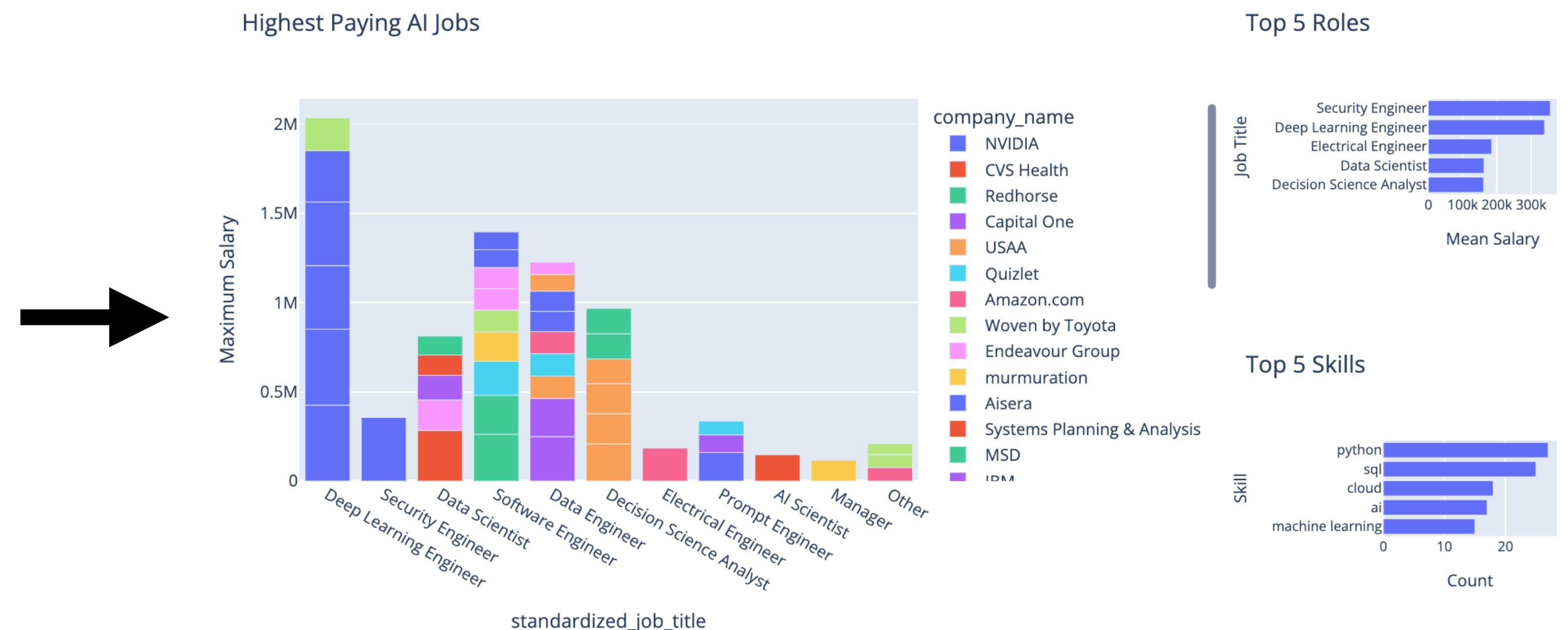
Job Title	Company	Description	Salary

... but not the insights



Example 2

Top AI Jobs Dashboard with Plotly Dash (Solution)

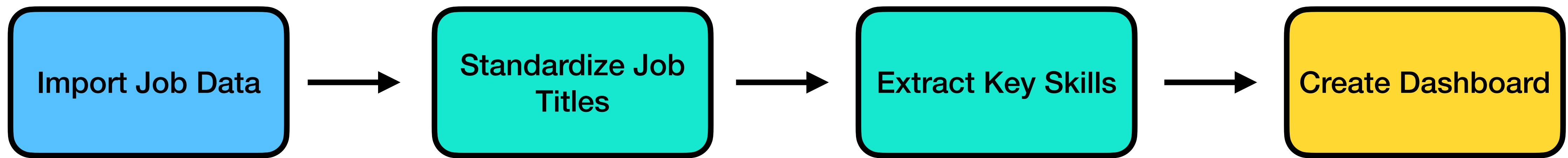


Data

Interactive Dashboard

Example 2

Top AI Jobs Dashboard with Plotly Dash (Workflow)



Example 2

Top AI Jobs Dashboard with Plotly Dash (Code Walkthrough)



More Examples

Sending emails with Python (Cohort 1)

1) Automated Email Sender

2) Automated Report Builder and Emailer

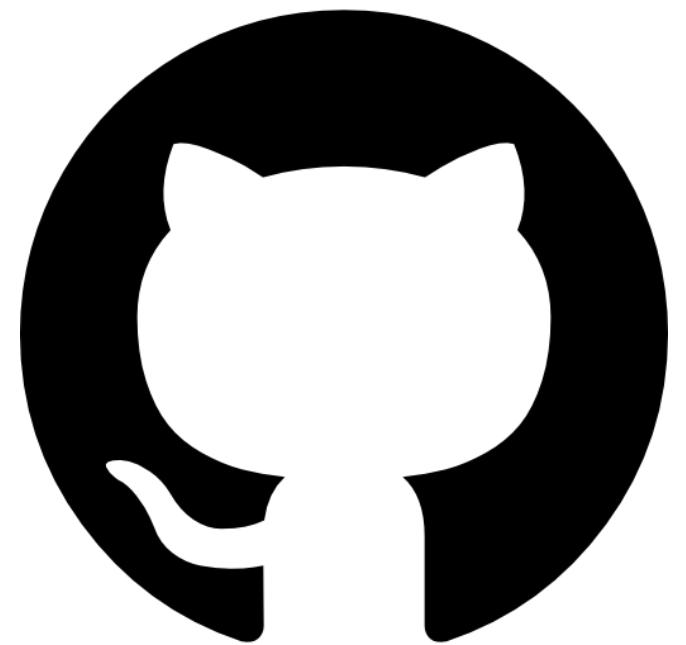


ABB1 GitHub Repo

Homework 1

Project

Build a Python Automation (using only Software 1.0)

Pre-work

Session 2: Data Engineering

Session 2: Machine Learning

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 \[Mini-Course\]](#)

