

ABB - Session 1

Introduction, Software 1.0, Automation, Python

Shaw Talebi

Today's Session

1. About ↗

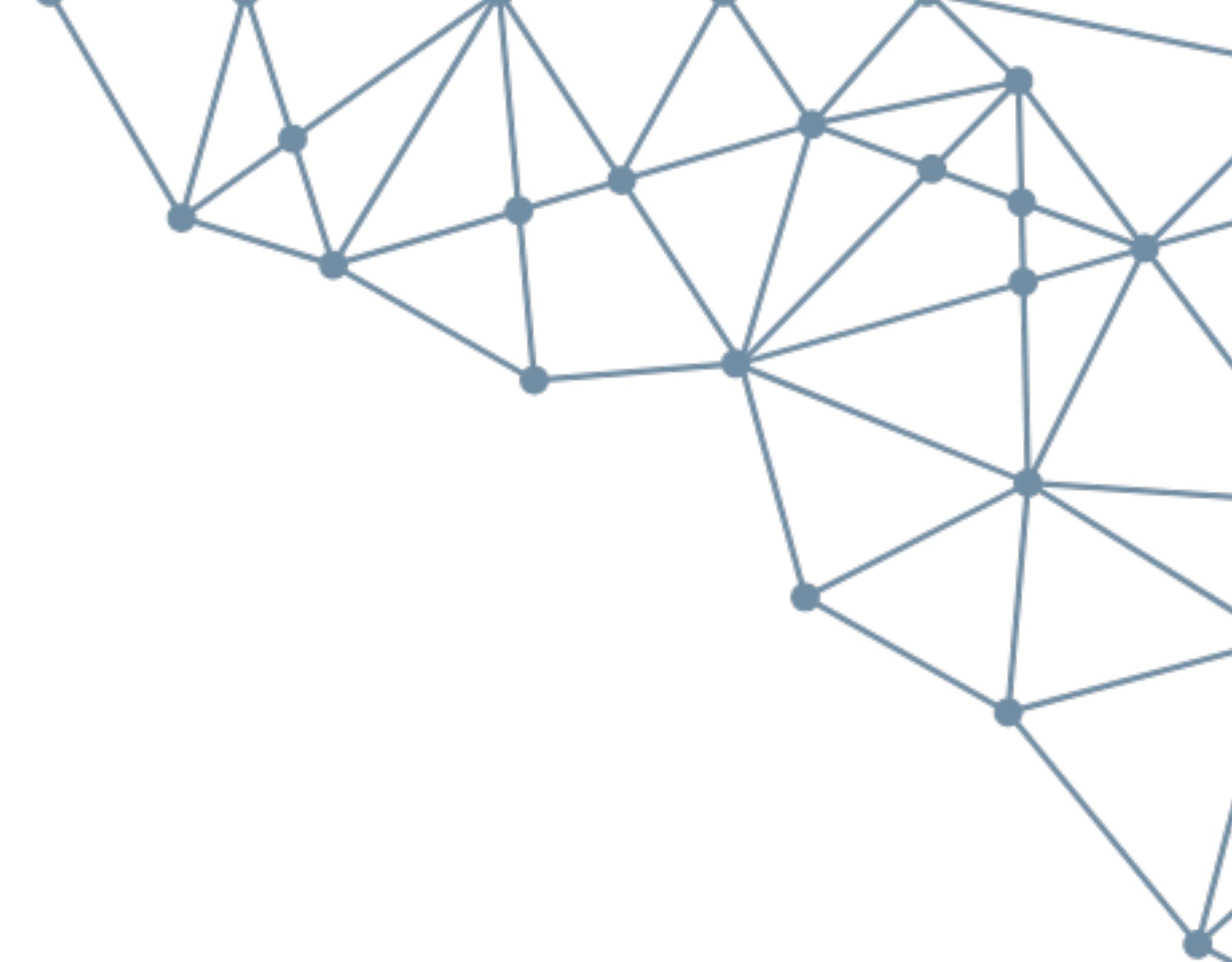
- 1.1. About Me
- 1.2. About This Course

2. An Introduction to AI ↗

- 2.1. What is AI?
- 2.2. 3 Types of Software
- 2.3. Software 1.0
- 2.4. Python

3. Example Code ↗

- 3.1. Replicating Maven Broadcasts (Notebook)
- 3.2. Replicating Maven Broadcasts (Script)
- 3.3. Automated Report Builder and Emailer



About

About Me



Physics PhD
AI Researcher

2018



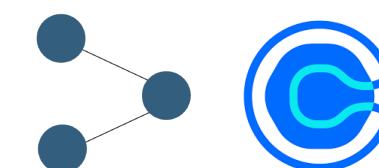
Data Scientist

2022

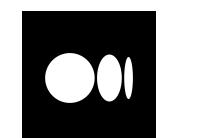


Data Entrepreneur

2023



Helped over 100 clients



15k followers



~40k subscribers



About This Course

Overview

Course Title: AI Builders Bootcamp - Cohort #1

Instructor: Dr. Shaw Talebi

Email: shawhintalebi@gmail.com

Session times: Weekly live sessions on Fridays from 10AM - 12PM CST

Course Length: 6 sessions (12 hours total)

Location: Sessions will be hosted via Zoom

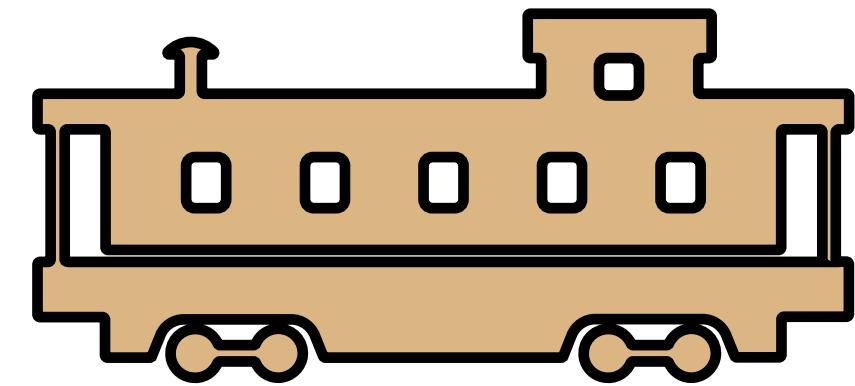
Learning Objectives

1. Define key terms and concepts associated with AI
2. Effectively use AI tools to accelerate existing workflows
3. Design and implement basic machine learning systems with Python
4. Develop custom AI systems using OpenAI and Hugging Face APIs
5. Identify which AI techniques are best suited to a particular problem

About This Course

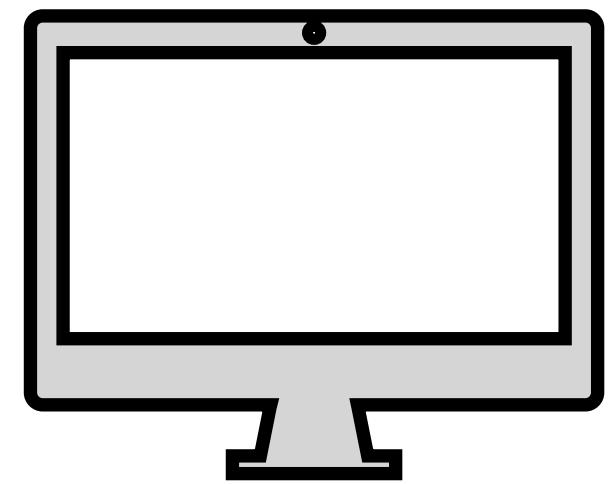
Why

Technological Revolutions



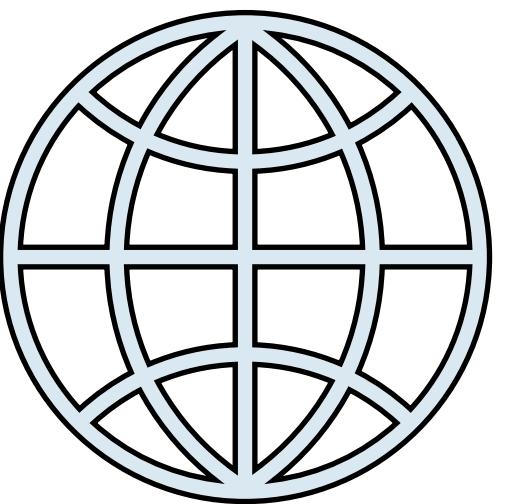
Industrial

1700s



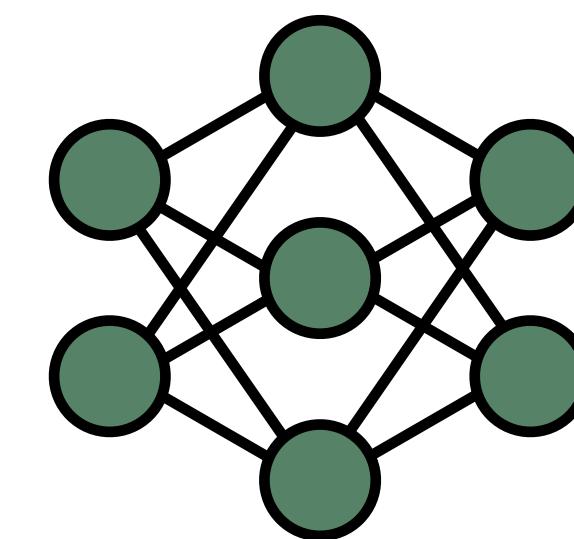
Computer

1940s



Internet

1990s

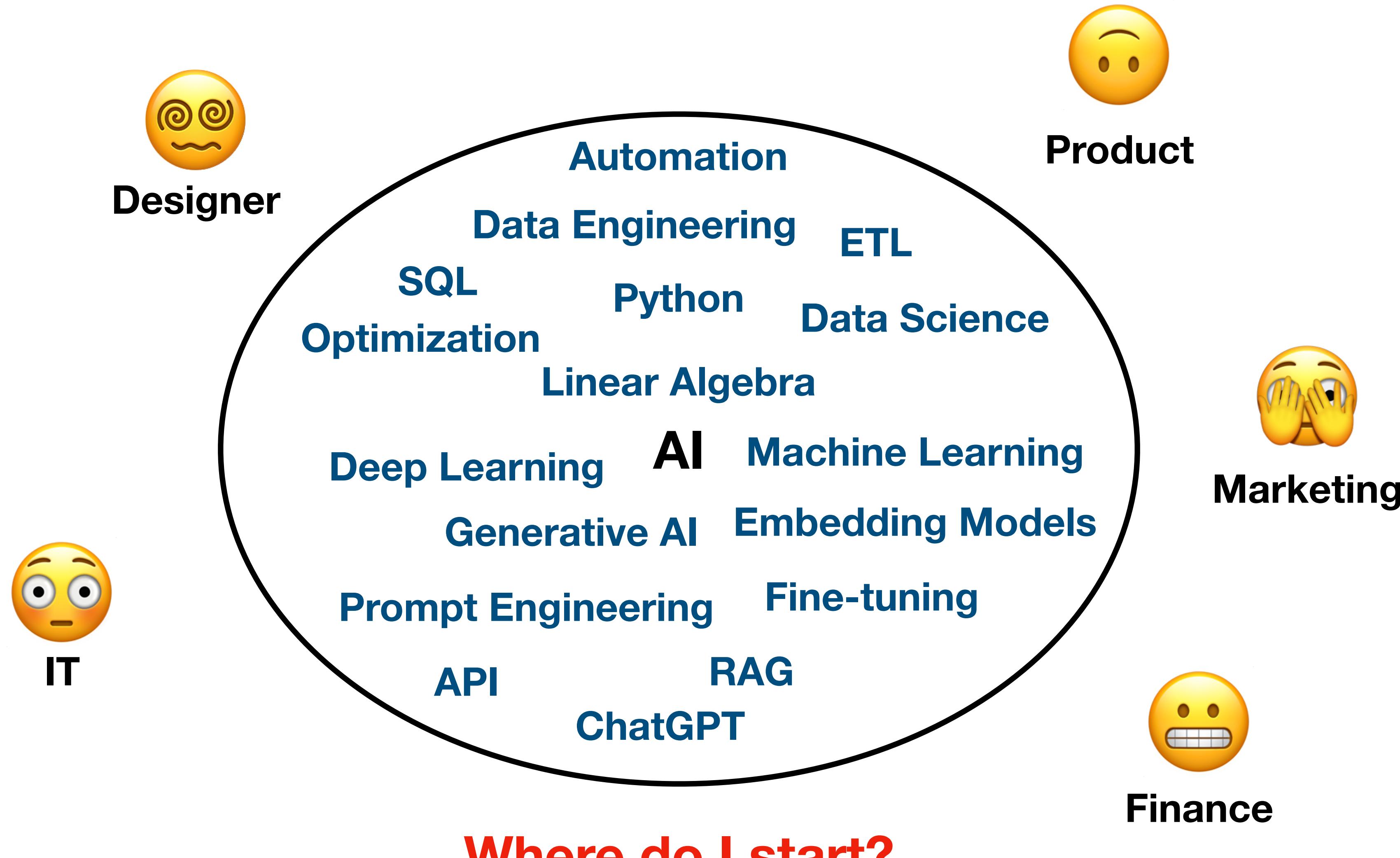


AI

2010s

About This Course

Why



About This Course

Teaching Philosophy

Building > Studying

The truth is in the code.

-Ghandi

3 Ways to Learn:

- 1) Seeing 
- 2) Doing 
- 3) Teaching 

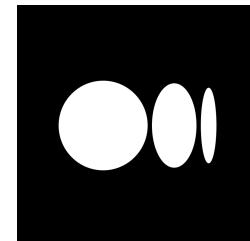
About This Course

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.

Ideas shared in learner community.

Tip: Focus on solving problems

Pros

Solidify understanding of key concepts

Feature projects in portfolio

Receive feedback from instructor

About This Course

How to be successful

How can I get the most out this course?

1. Attend live sessions
2. Complete pre-work (prior to lecture)
3. Engage with fellow cohort members (on and off Maven)
4. Do weekly projects

How can I get help outside lecture?

1. Post in learner community
2. DM on Maven or Email me (shawhintalebi@gmail.com)

The screenshot shows a Slack interface. On the left, there's a sidebar with icons for Home, Inbox, People, and a list of channels: admins, announcements, general, intros, questions (which is highlighted with a grey background), projects, and Create a Python Project. The main area shows a message from Shaw Talebi on November 5, 2024, asking if help is available outside of class. Below it, a response from the same user explains that beyond class, two options exist: posting in the learner community or messaging via DM or email.

Tuesday, November 5

Shaw Talebi 11/05/24

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)?

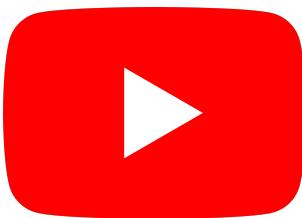
A: Beyond asking questions during class, there are two ways to get additional help.

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)

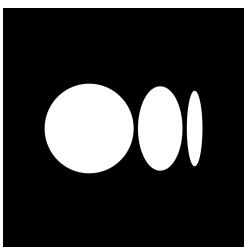
ADD REPLY

About This Course

Additional Resources



@ShawinTalebi



@shawhin



ShawinT/AI-Builders-Bootcamp-1

Syllabus

Course Title: AI Builders Bootcamp - Cohort #1
Instructor: Dr. Shaw Talebi
Email: shawhintalebi@gmail.com

Session times: Weekly live sessions on Fridays from 10AM - 12PM CST
Course Length: 6 sessions (12 hours total)
Location: Sessions will be hosted via Zoom

Course Overview: Acquiring a practical understanding of AI through building projects, lectures will center around specific use cases that students can leverage in developing their projects. Students learn the basics of AI, data engineering, machine learning, generative AI, prompt engineering, RAG, fine-tuning, and AI project management.

Learning Objectives

1. Define key terms and concepts associated with AI
2. Effectively use AI tools to accelerate existing workflows
3. Design and implement basic machine learning systems with Python
4. Develop custom AI systems using OpenAI and Hugging Face APIs
5. Identify which AI techniques are best suited to a particular problem

Teaching Philosophy

There are 3 key ways to learn: seeing, doing, and teaching. This course provides opportunities for all three.

1. **Seeing:** Lectures describing key concepts and demonstrating them through practical examples. Session pre-work consisting of pre-recorded explainer videos and blog posts.
2. **Doing:** Homework aimed at applying learnings from lectures to custom projects.
3. **Teaching:** Private cohort community enabling learners to share feedback on questions and projects.

Course Outline*

1. What is AI?, 3 Types of Software, Automation, Python
2. Data engineering, ETL, machine learning, linear regression, decision trees
3. Foundation models, Large Language Models (LLMs), prompt engineering
4. Embedding models, RAG, AI assistants
5. Fine-tuning, LoRA, QLoRA
6. AI Project Management

*Course content may change based on learner needs, and shall be determined by the instructor. If such a change is made, students will be given prior notice.

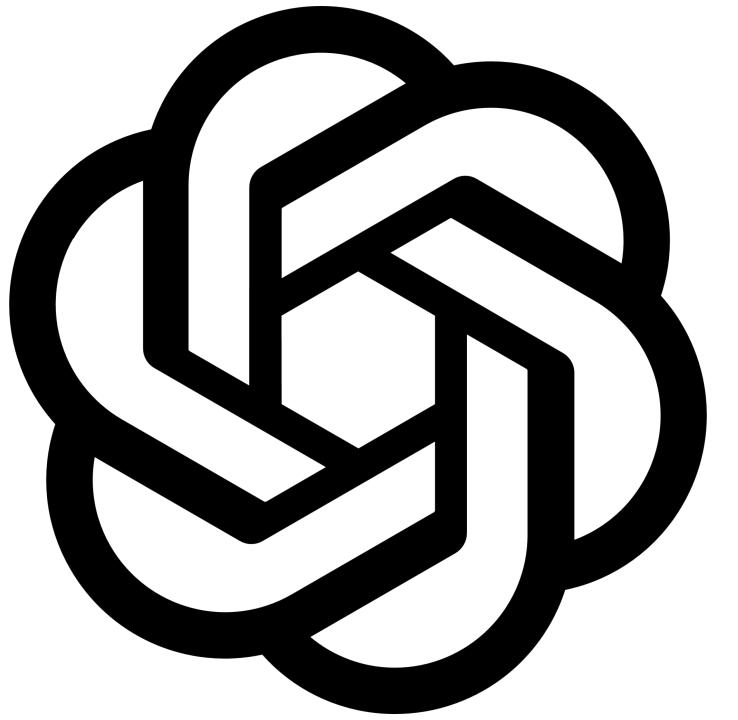
1 of 4



Syllabus

An Introduction to AI

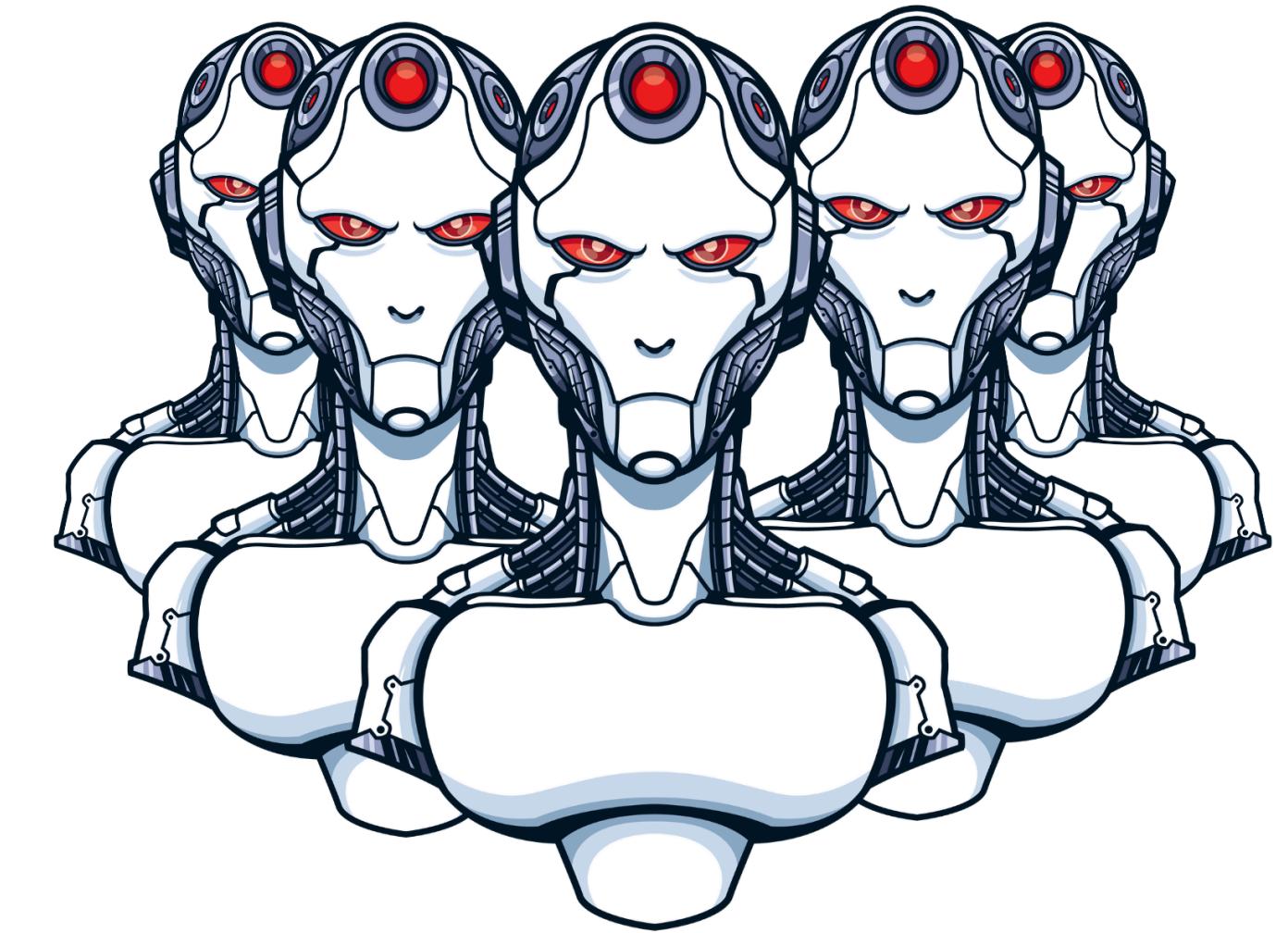
What is AI?



ChatGPT



AI Art



Killer Robots

Artificial Intelligence

Artificial Intelligence

Made by humans

Artificial Intelligence

The ability to solve problems and make decisions

Artificial Intelligence

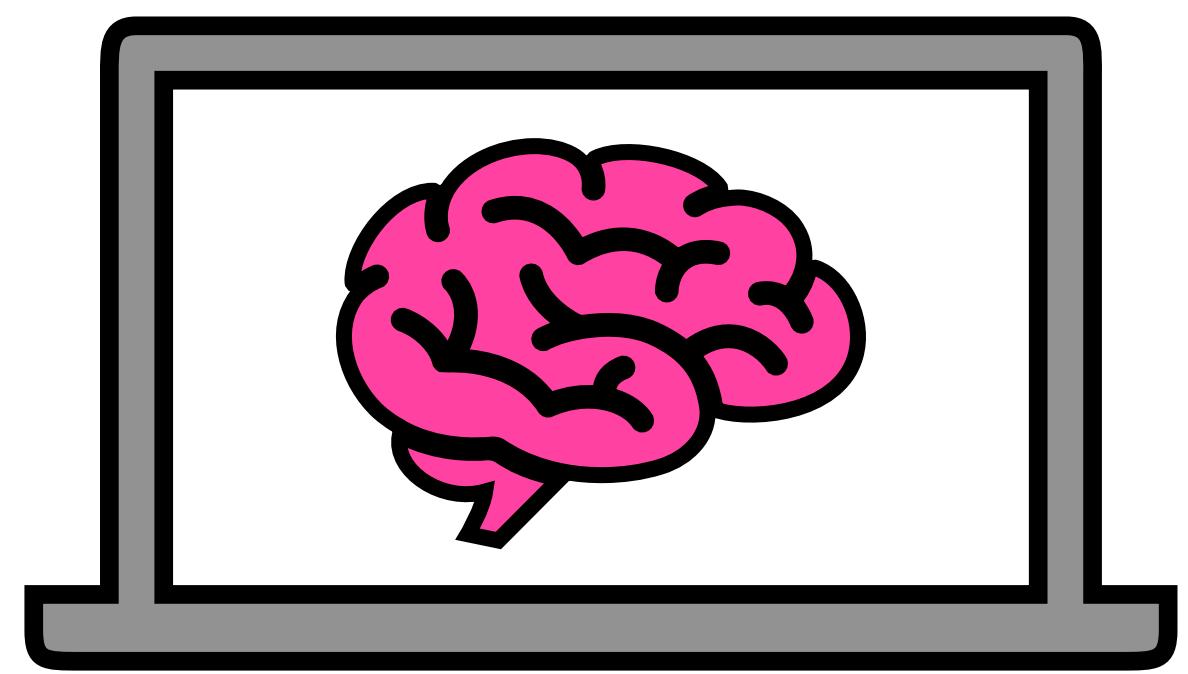
A computer's ability to solve problems and make decisions

3 Types of AI



Software 1.0

Rules-based Systems



Software 2.0

Machine Learning



Meta Llama 3

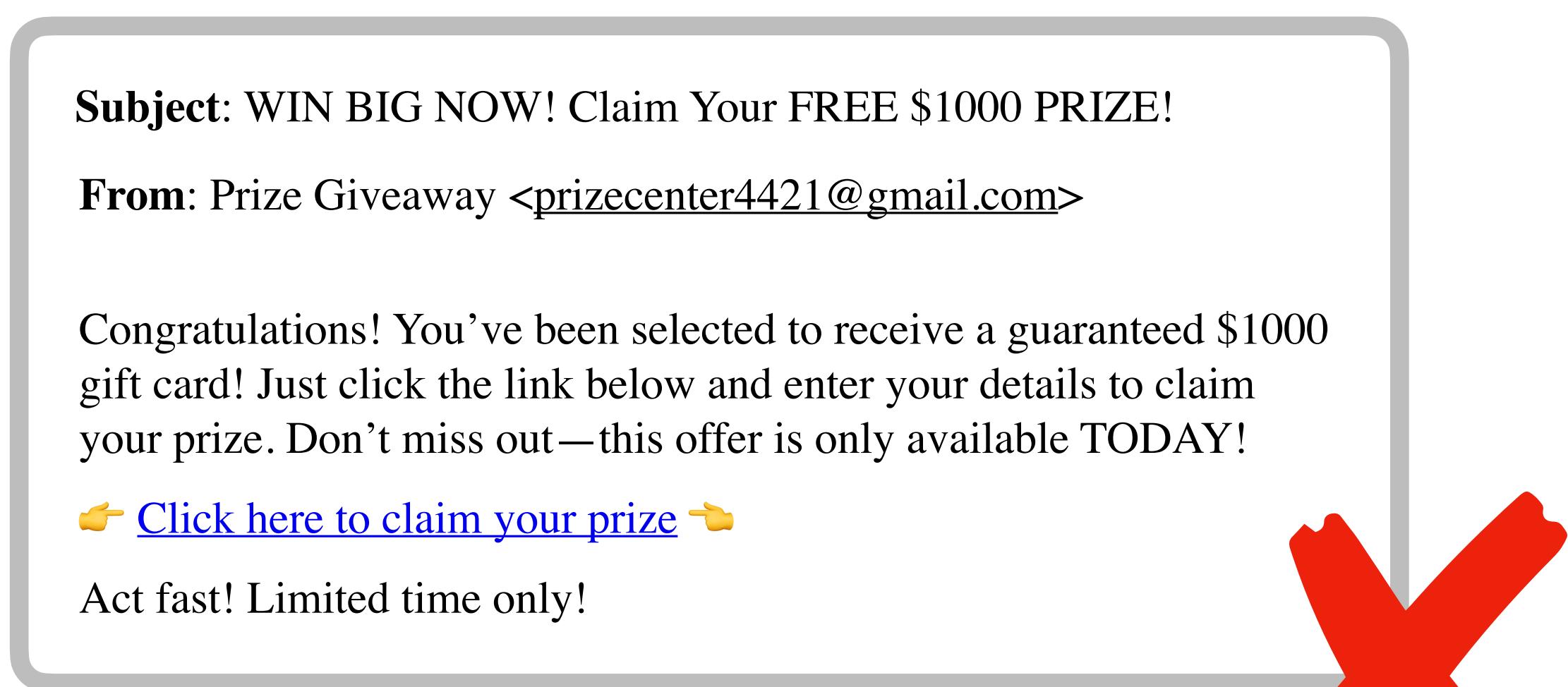
Software 3.0

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:

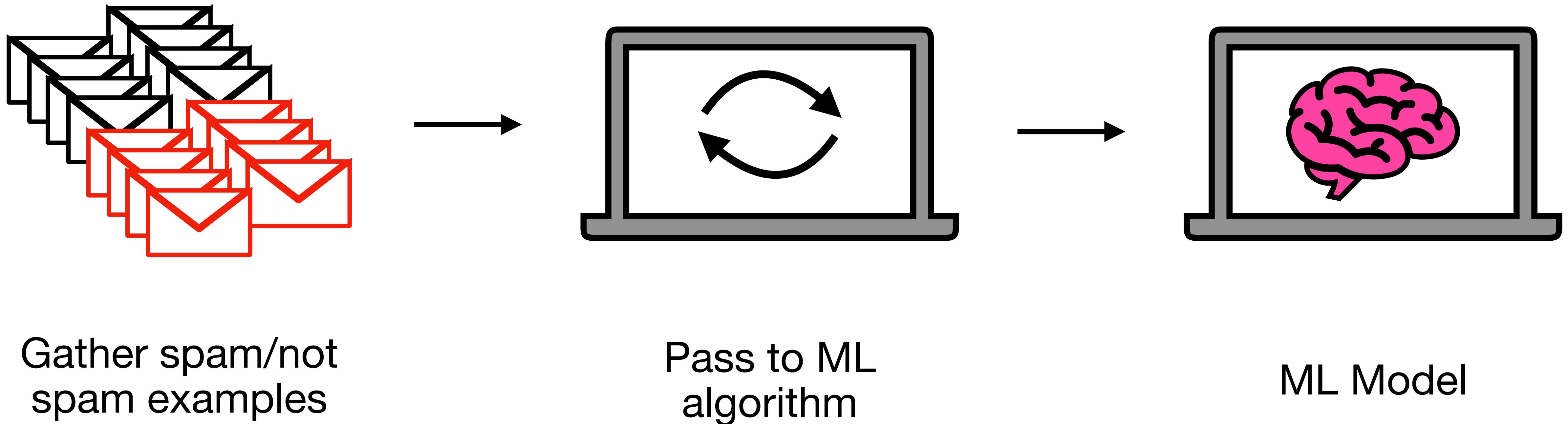
1. Subject contains: "free", "urgent", "win", "guarantee", "prize", "click here"
2. Sender has suspicious domain: e.g. ".ru", ".xyz", ".icu"
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Software 2.0

Programming computers by example

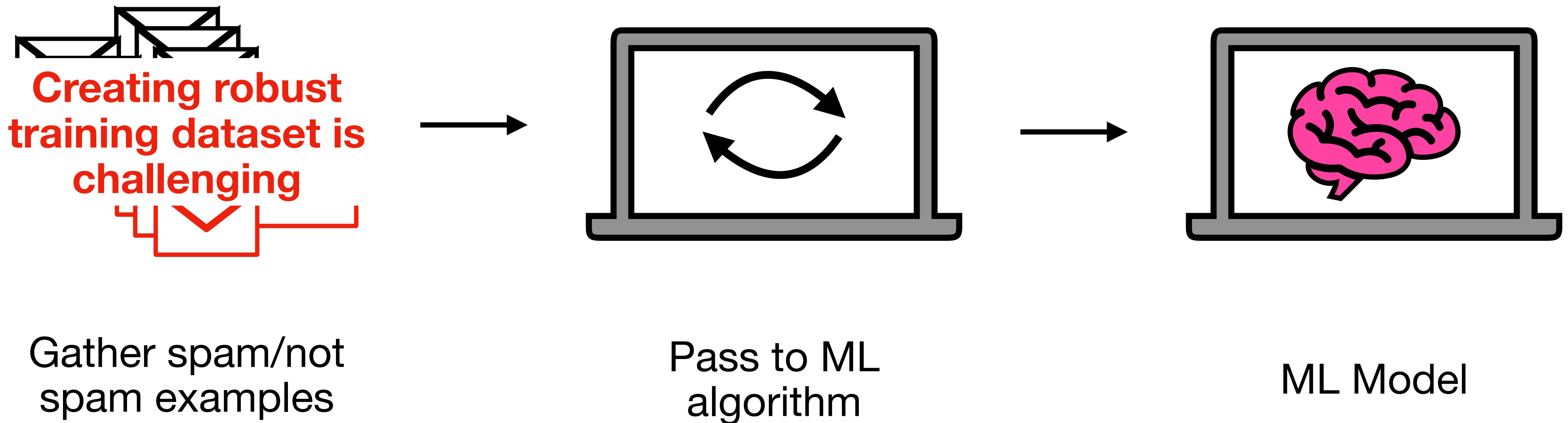
Example: Spam Email Detection



Software 2.0

Programming computers by example

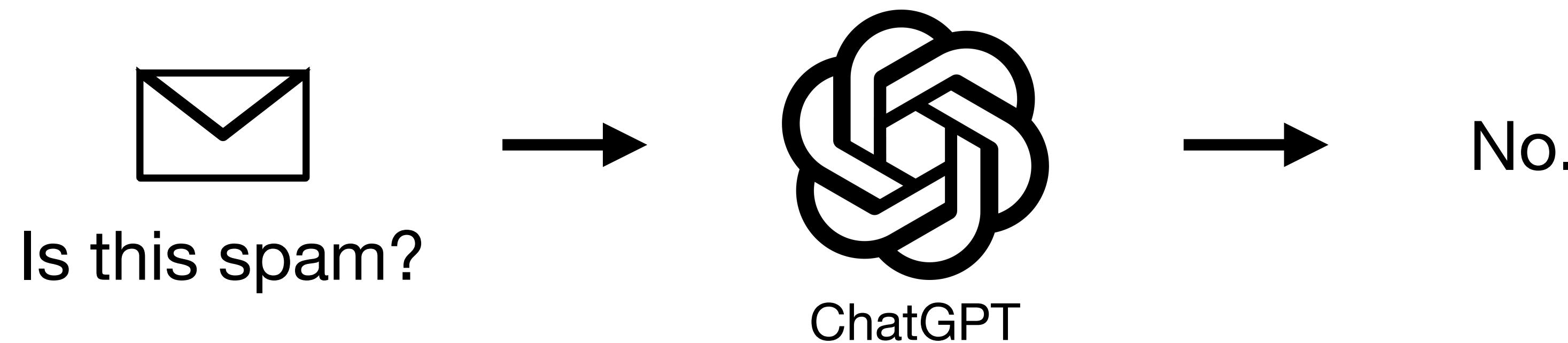
Example: Spam Email Detection



Software 3.0

Adapting generic models for specific use cases

Example: Spam Email Detection



**Easy but may be
overkill**

Software 1.0: Automation & Python

Automation

Replacing brain power with computer power

Current Process

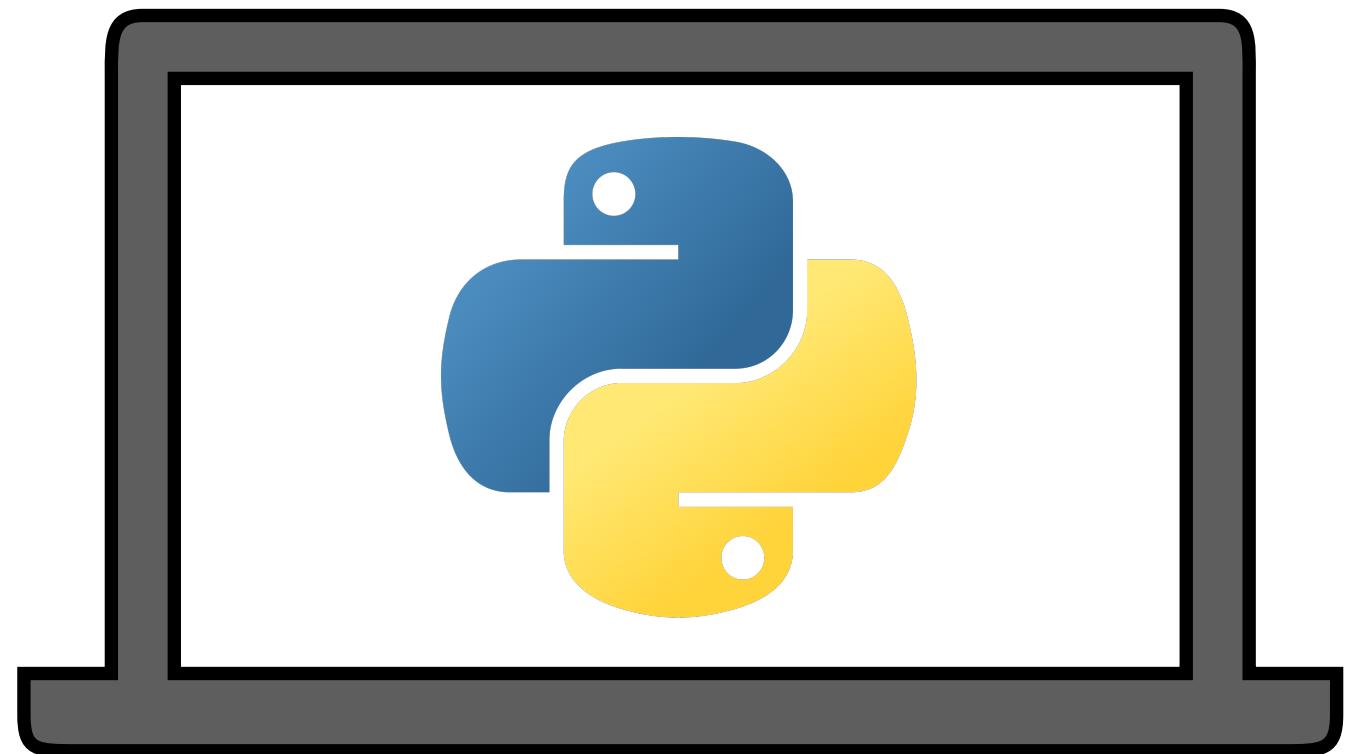


Automated Process



Python (Programming Language)

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



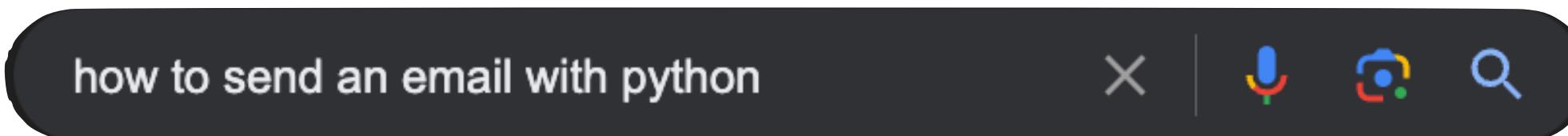
Why?

- 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

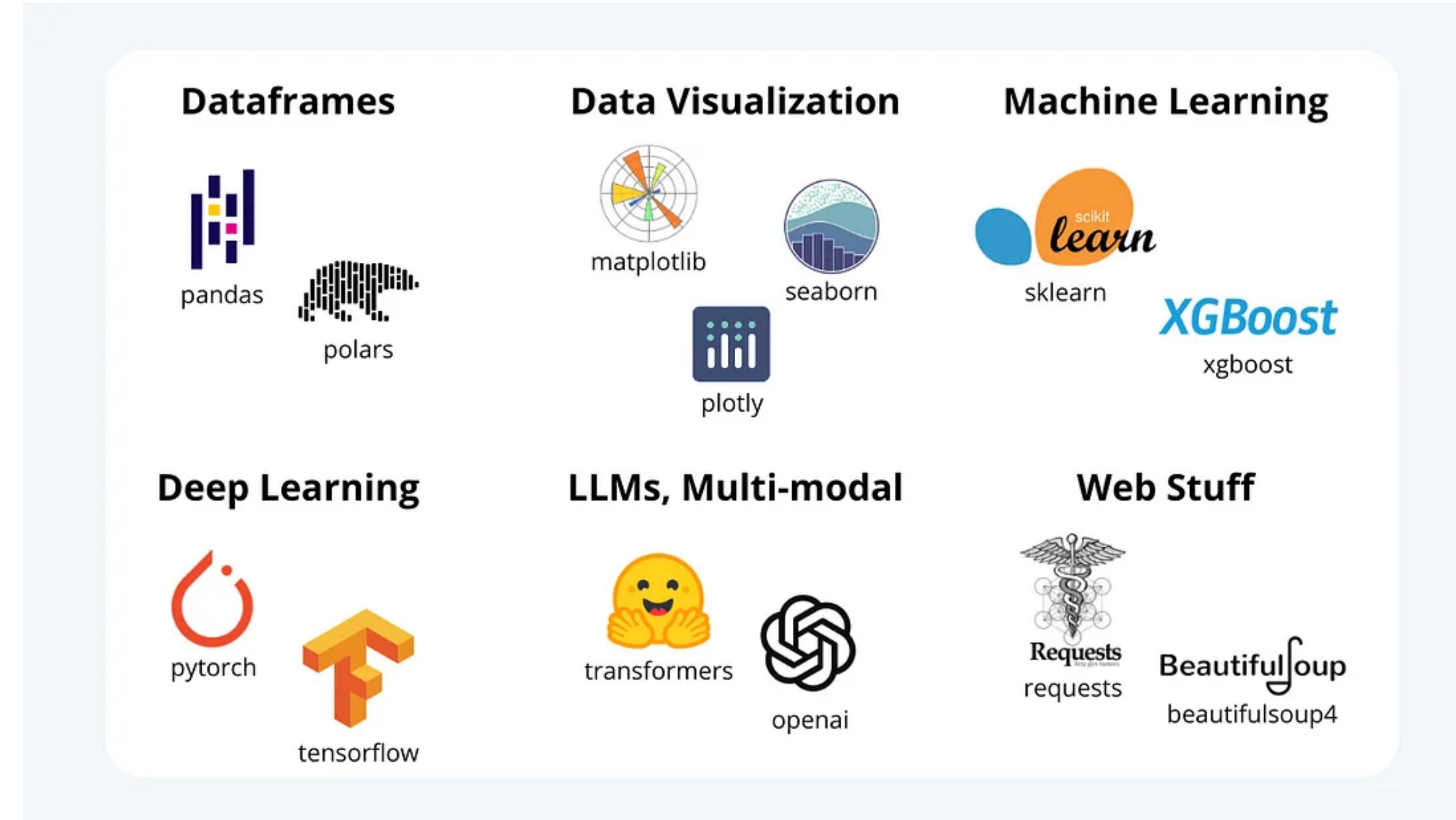
# Email settings
sender_email = "your_email@example.com"
receiver_email = "receiver_email@example.com"
password = "your_password"
subject = "Test Email from Python"
body = "This is a test email sent from Python!"
```

Wisdom of the crowd i.e. Stack Overflow

(Ask follow-up questions)

Python Libraries for AI

Expanding core Python functionality



Installing Python

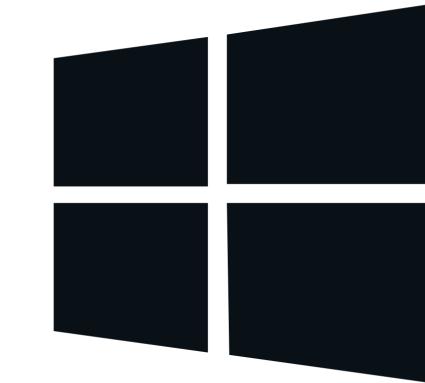
Anaconda: <https://www.anaconda.com/download/success>



Mac: <https://docs.python.org/3/using/mac.html>



Windows: <https://docs.python.org/3/using/windows.html>



Examples

Example 1

Replicating Maven Broadcasts (Notebook)

SEND TO

Cohort 1 Enrolled Students

SUBJECT LINE

Welcome to {{ CourseName }}!

[{{ StudentName }}](#) [{{ CourseName }}](#) [{{ CourseLink }}](#) [{{ CohortStartDate }}](#) [{{ CohortEndDate }}](#)

[{{ CohortName }}](#) [{{ PortalOpenDate }}](#) [{{ StudentShareLink }}](#)

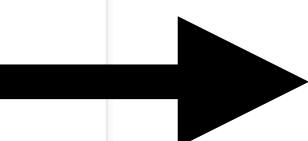
Click to copy variables and paste them into your email. Learn how to use these email variables [here](#)

B I U ≡ ≡ ⌂ ⌂

Hey {{ StudentName }},
I'm super excited to have you here!
We'll be getting started on {{ CohortStartDate }} and finishing up on {{ CohortEndDate }}.
Keep your eye out for the course portal, which will open up on {{ PortalOpenDate }}.
Let me know if you have any questions in the meantime :)
-Shaw

Warning: The {{ CourseLink }} variable is suggested for this template.

Send now Send test email



Welcome to AI Builders Bootcamp! [Inbox](#)

Shaw Talebi
to me ▾

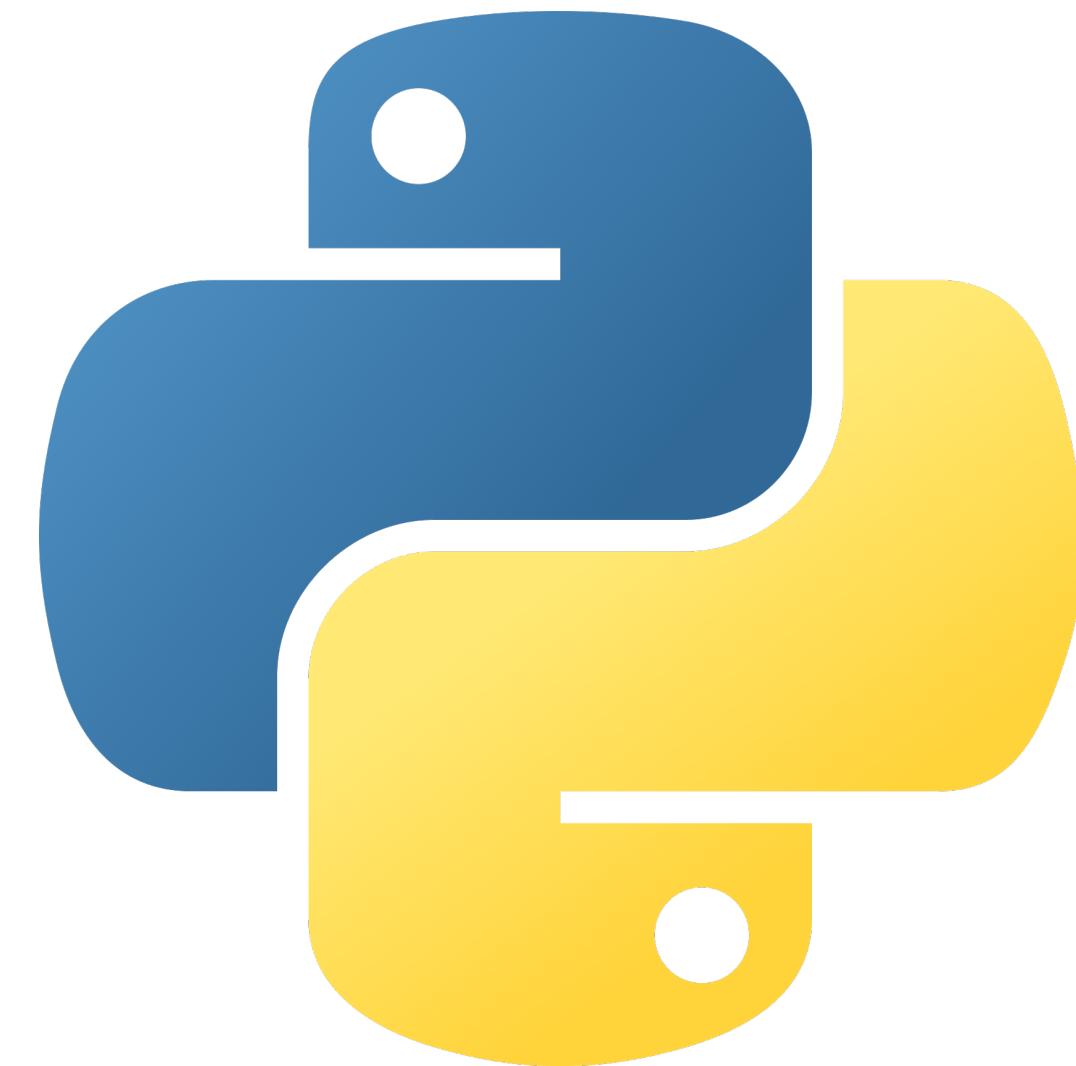
Hey Shaw,
I'm super excited to have you here!
We'll be getting started on November 08, 2024 at 12:00AM CST and finishing up on December 20, 2024 at 12:00AM CST.
Keep your eye out for the course portal, which will open up on November 04, 2024 at 12:00AM CST.
Let me know if you have any questions in the meantime :)

-Shaw



Example 2

Replicating Maven Broadcasts (Script)



Example 3

Automated Report Builder and Emailer

ABB #1 - Pre-course Survey

The AI Builders Bootcamp (ABB) is a 6-week program focused on developing real-world AI skills through building projects.

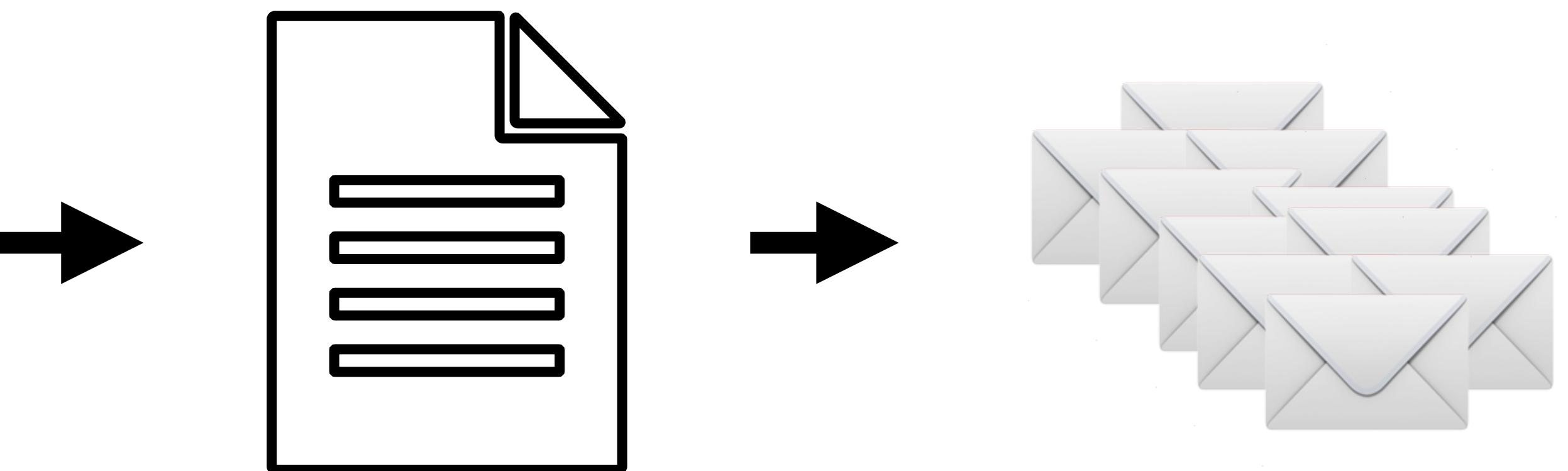
This form aims to gather past experience and preferences of learners so that I can better curate the course material to match cohort needs.

-Shaw

shawhintalebi@gmail.com [Switch account](#)

 Not shared

* Indicates required question



Collect Survey

Summarize
Results

Email
Results



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 \[Mini-Course\]](#)

