

Plan

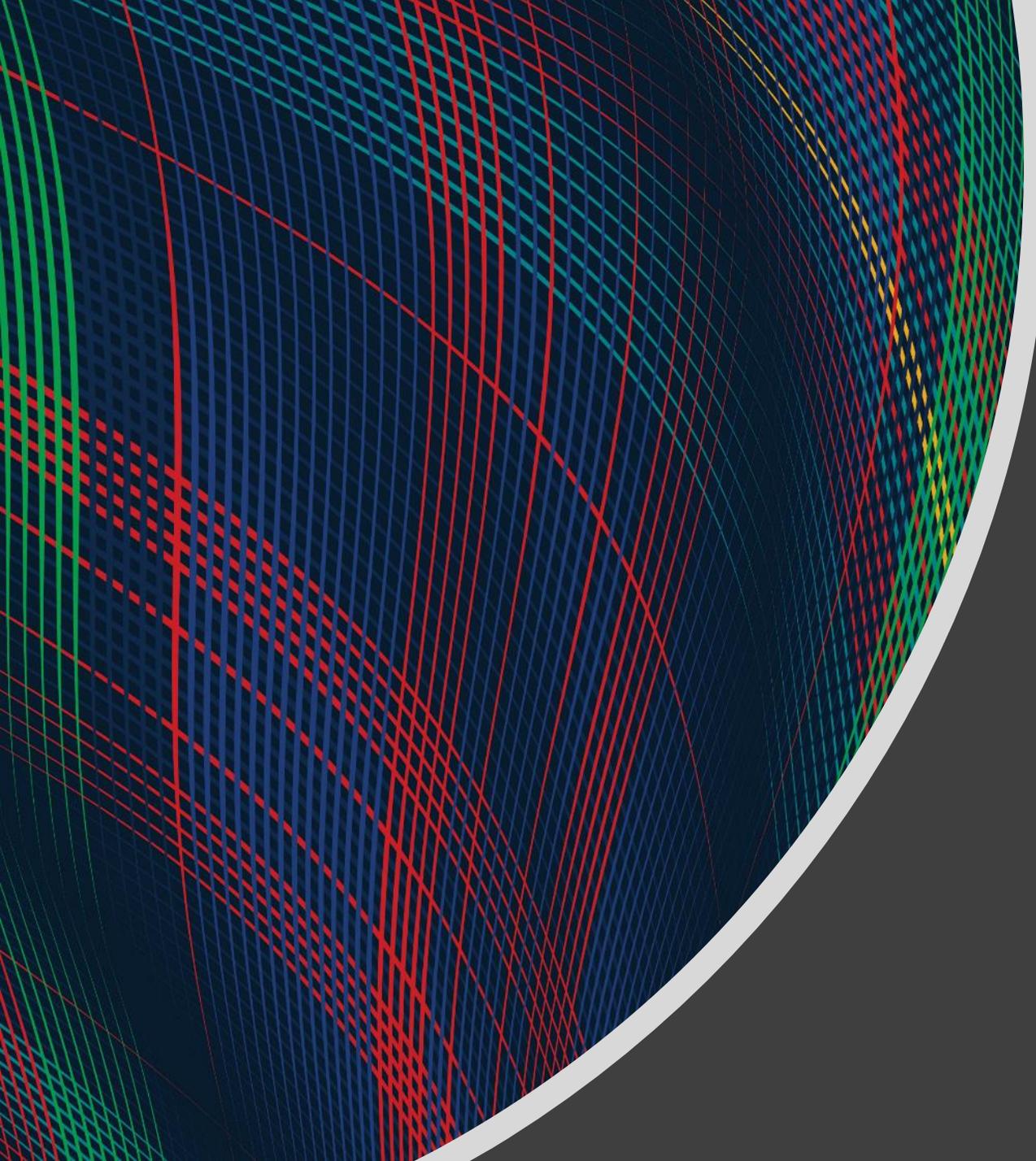
Wrap up exercise on linear regression with more features

AI applications

- Review our Wordle design ideas
- Subtasks: Example distracted politician detection
- Regression task scavenger hunt

AI Ethics Timeout

- Focus: Safety and Legal Liability

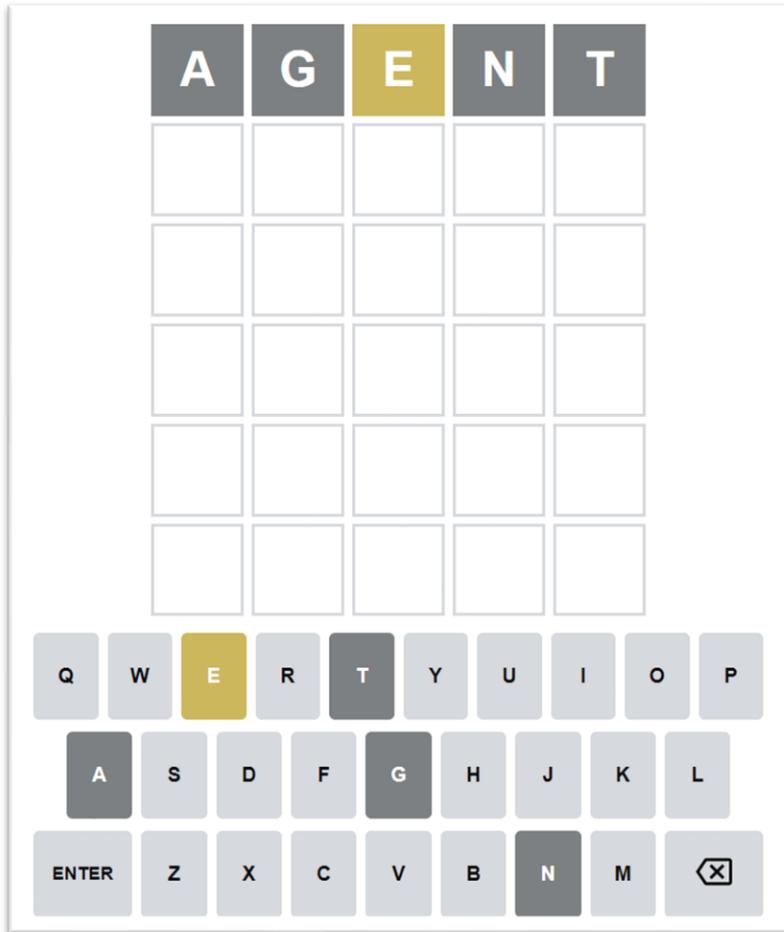


Demystifying AI

Regression
Applications
&
AI Ethics Timeout

Instructor: Pat Virtue

Review: Wordle Design Challenge



Guess the **WORDLE** in six tries. ✕

Each guess must be a valid five-letter word. Hit the enter button to submit.

After each guess, the color of the tiles will change to show how close your guess was to the word.

Examples

W E A R Y

The letter **W** is in the word and in the correct spot.

P **I** L L S

The letter **I** is in the word but in the wrong spot.

V A **G** U E

The letter **U** is not in the word in any spot.

Review: Wordle Design Challenge

Agent design

Input: Results of previous guess: list of five integers, each 0 or 1 or 2

Output: Next guess: five-character string

Loop with environment: Yes

Data

- Vocabulary: list of five-character strings that are valid words
- Vocabulary frequency: dictionary mapping each word to the number of times it appears in a giant text dataset.

Review: Wordle Design Challenge

Agent design

Performance measure options

- A. 1 for winning within six guesses and 0 otherwise
- B. Number of guesses before winning (handle > 6 somehow?)

Reminder: Design agent to maximize (or minimize) performance measure

Review: Wordle Design Challenge

Potential design components

Filter invalid words:

- Input: current vocab list, previous guess, previous result
- Output: vocab list with inconsistent words removed

Choose random word from current vocab

- Input: current vocab list
- Output: string

Choose random word from current vocab based on frequency data

Review: Wordle Design Challenge

Potential design components

Reminder: Design Challenge



HOME GUIDE NEWS REVIEWS FEATURES

News:

<https://gadgets.ndtv.com/social-networking/news/flemish-scrollers-ai-ml-bot-tool-software-belgium-politicians-distracted-phone-detect-troll-twitter-2480493>

Source: Twitter @Flemish Scroller

AI-Based Bot Detects Politicians Distracted by Phone, Posts Photo on Twitter and Asks Them to Focus

The software searches for phones and then look for distracted politicians during livestreams of parliamentary sessions.

By Edited by Gadgets 360 Newsdesk | Updated: 6 July 2021 16:34 IST

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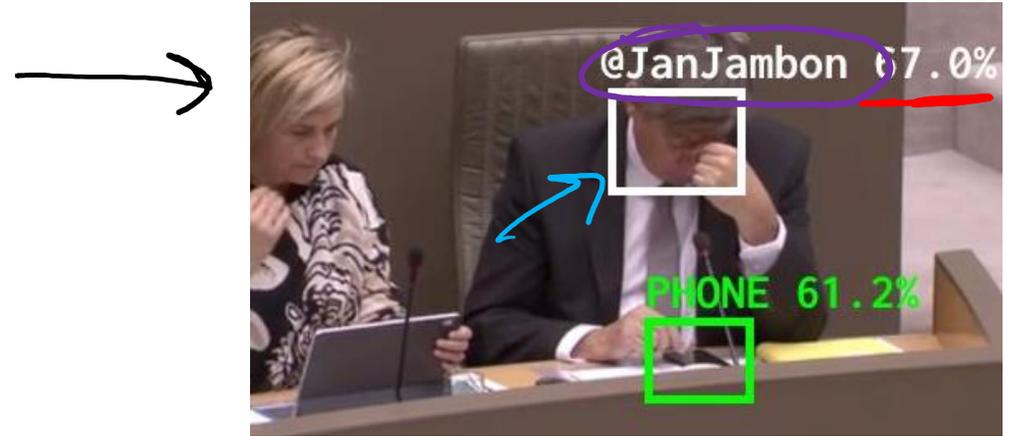
Comment



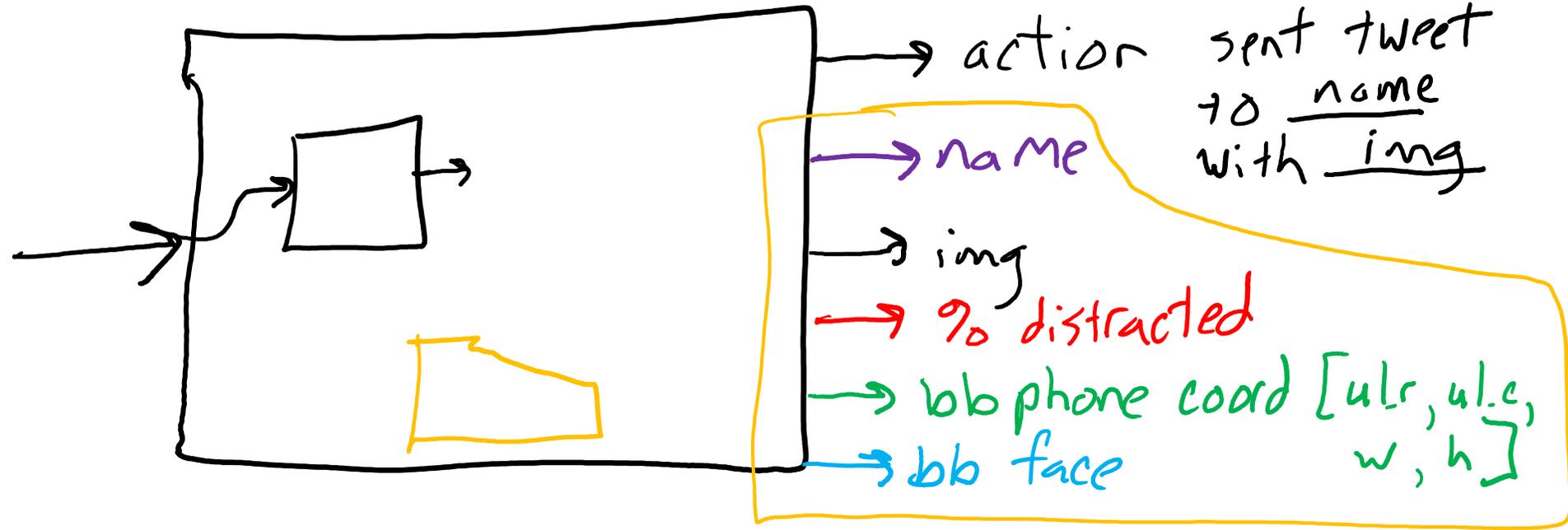
Reminder: Design Challenge

Distracted Politician Detection

What is the input and output for this task?



(Video)
Image



Sub Tasks within an Agent

Distracted Politician Detection

What smaller pieces could potentially be designed, trained, tested independently



Regression Application Scavenger Hunt

Find real-world regression tasks (or sub-tasks)

- May have one or many outputs as long as they are all numerical (can be placed on a meaningful number line and not categories like 1 for Red and 2 for Blue)
- Doesn't have to be linear (could be much more complex than that)
- Bonus points for the following industries:
 - Travel
 - Healthcare

Tips for searching on the internet:

- “ML applications”
- “regression datasets”

To get credit: Complete google slide for each application you find!

AI Ethics Timeout

Focus: Safety and Legal Liability

AI Ethics Timeout

Focus: Safety and Legal Liability

Case study: Autonomous Driving

Los Angeles Times

BUSINESS

Waymo sues state DMV to keep robotaxi safety details secret

BY RUSS MITCHELL | STAFF WRITER

JAN. 28, 2022 5 AM PT

Waymo, the driverless car company operating an autonomous taxi fleet in San Francisco, is suing the California Department of Motor Vehicles. The immediate issue: whether the company, owned by Google parent Alphabet Inc., can hide from the public safety-related information by designating it as a trade secret.

<https://www.latimes.com/business/story/2022-01-28/waymo-robot-taxi-sues-state-secret-black-ice>

AI Ethics Timeout

Focus: Safety and Legal Liability

Case study: Autonomous Driving

GIZMODO | Tech. Science. Culture.

TRANSPORTATION

Court Lets Waymo Keep Its Secrets

The California court's decision comes just over a month after the self-driving car giant sued the DMV over a public records request.

By Shoshana Wodinsky | Yesterday 3:56PM | Comments (1) | Alerts

[f](#) [t](#) [r](#) [l](#) [e](#) [b](#)



<https://gizmodo.com/court-lets-waymo-keep-its-secrets-1848581918>

AI Ethics Timeout

Focus: Safety and Legal Liability

NEWS

Unpacking the Black Box in Artificial Intelligence for Medicine

Deep learning will radically change aspects of our medical care. How well do we need to understand how AI tools work?

Visual: Yuichiro Chino / Getty Images



<https://undark.org/2019/12/04/black-box-artificial-intelligence/>

AI Ethics Timeout

Focus: Safety and Legal Liability

How do we determine what went wrong (or right) in deployed AI systems?

What does it mean to have explainable results from an AI system?

Who is responsible for “mistakes” that AI systems make?

What if someone or another AI misuses AI technology? Who is responsible?

Once autonomous vehicles are readily available, should it be illegal for humans to drive?

Domains to think about:

- Self-driving cars

- Healthcare decision-making

- Land and Air traffic control