

Towards an AI Singularity

Open AI compared with Executable English

Adrian Walker

www.executable-english.com December 2022

1. What are **Open AI** and **Executable English**

Openai [OAI] is an AI language model that you can demo yourself by asking it questions in English.

Executable English [EE] is an open vocabulary platform, for answering databased questions, that you can similarly self demo.

Both OAI and EE support update of the knowledge that they use.

2. Do OAI and EE Generate Code?

OAI generates code outlines, in SQL and other programming languages, that programmers can use as starting points

EE generates working code in SQL, without any help from programmers.

3. How well do OAI and EE perform?

OAI has impressive performance on small, simple examples, but fades gracefully to punting in the face of complexity

EE generates networked SQL and executes it directly.

4. Examples

Example0

USER> What is the meaning of all men are mortal / Socrates is a man/ socrates is mortal?

OAI> The meaning of this statement is that all people are mortal, and since Socrates is a man, it follows that he is also mortal.

Example1

USER> what is the meaning of

employee some-empnumber some-name works in some-department
employee that-empnumber works on some-project

that-name in that-department works on that-project

OAI> This statement is saying that an employee with a specific employee number (some-empnumber), a specific name (some-name), and who works in a specific department (some-department) is working on a specific project (some-project). It is also saying that the same employee with that same employee number (that-empnumber), who is in that same department (that-department), is also working on the same project (that-project).

```
EE> SELECT EMP_DEPT.NAME,EMP_DEPT.DEPT,EMP_PROJ.PROJ
from EMP_DEPT,EMP_PROJ
where EMP_DEPT.EMPNUM=EMP_PROJ.EMPNUM
order by EMP_DEPT.NAME,EMP_DEPT.DEPT,EMP_PROJ.PROJ;
```

5. Example2

USER> what is the meaning of [EX2]

we plan to ship some-shipnum of a-product in quarter eg-qnum
that-product has some-number of the immediate part some-item
the expected yield of that-item is some-yield %, based on past experience
that-shipnum * that-number = some-initial-number
that-initial-number divided by that-yield (normalized and rounded up) is some-expected-number

we shall set up testers for that-expected-number of that-item in quarter eg-qnum

OAI> This statement is saying that the company plans to ship a certain number (some-shipnum) of a product (a-product) in a specific quarter (eg-qnum). The product in question has a certain number of immediate parts (some-item) with a specific number (some-number). The expected yield of that part (some-yield) is based on past experience. Once the ship number (that-shipnum) is multiplied by the number of parts (that-number), a certain initial number (some-initial-number) is generated. This initial number is then divided by the expected yield (that-yield), normalized, and rounded up to generate an expected number (some-expected-number). As such, the company will set up testers for the expected number (that-expected-number) of the item (that-item) in the same quarter (eg-qnum).

USER> show me a SQL query for

we plan to ship some-shipnum of a-product in quarter eg-qnum
that-product has some-number of the immediate part some-item
the expected yield of that-item is some-yield %, based on past experience
that-shipnum * that-number = some-initial-number
that-initial-number divided by that-yield (normalized and rounded up) is some-expected-number

we shall set up testers for that-expected-number of that-item in quarter eg-qnum

```
OAI> SELECT expected_number
FROM product
WHERE product_name = 'a-product'
AND ship_number = some-shipnum
AND quarter = 'eg-qnum'
AND part_name = 'some-item'
AND expected_yield = 'some-yield'
AND initial_number = 'some-initial-number'
AND expected_number = 'some-expected-number';
```

6. COMMENTARY Dec 5th 2022

OAI is intuitive and impressive on small examples, but gives wrong answers on a significant fraction of questions.

EE Requires careful input of specifications in the form of syllogisms, but -- absent low level coding bugs --- It does not produce wrong answers. It also explains its answers, and produces explanations when an expected answer is missing.

7. LINKS

[EE] www.executable-english.com

[OAI] beta.openai.com/playground

[EX2] www.executable-english.com/demo_agents/TestMachineRequirements.agent

