time	source	#chars
0.107	487614	1000
0.204	487614	2000
0.302	487614	8000
1.440	487614	16000
2.825	487614	32000
5.674	487614	64000

1) Yes they do, the timings are represented by O(NT) which is confirmed when keeping T fixed and N as the dependent variable, the growth is linear, as well as when you keep N fixed and T variable, but when both are variable, the growth is quadratic.

2) The timings seen by both are linear when the other is held constant. When T is constant, time increases by 0.0169 on average (0.193-0.024/10) for every increment in size of characters (+487614) representing a *linear* increase.

3)

```
0.024   487614  4096
0.041   975228  4096
0.062   1462842 4096
0.091   1950456 4096
0.100   2438070 4096
0.134   2925684 4096
0.148   3413298 4096
0.159   3900912 4096
0.185   4388526 4096
0.193   4876140 4096
```

4) I found it interesting how different algorithms were more efficient for large datasets and then also small datasets. I assumed algorithms that are fast for big sets would also be very quick on small sets, but this is not the case. There is also jack of all trades algorithms that do pretty well on most data sets such as GPT-3, but gets beat out by the more specific ones such as GPT-3-175B.

I liked the part in the article that discussed AI learning upon itself, and in particular the quote “AI will be able to teach itself and thus improve upon its intelligence.” This is both scary and exciting at the same time. AI will create avenues for innovation we have never seen before, and if it can be created in a way that is safe it could push humanity forward so far.