United States District Court
Northern District of California
Δ DEFENDANT Δ
Case No. 4:24-CV-04722-YGR
Case Title Musk et al. v. Altman et al.
Exhibit No. DX-0728
Date Entered
Mark Busby, Clerk
By: , Deputy Clerk

From: Sam Teller [steller@openai.com]
Sent: 12/22/2017 11:58:54 PM
To: Shivon Zilis [shivon@openai.com]
Subject: Re: Update

E said again yesterday that his overall biggest concern remains AI stuff and that once we are stable with Model 3 he really plans to ratchet up time allocation. Reiterated that he thinks very low probability of OpenAI succeeding at AGI and we need to build up Tesla, but as you've said there's a lot of detail missing from the picture. Fine to forward this to him and maybe say Looks like Reid has finally started contributing. These guys have been slightly confused and unsure of your plans since the Tesla AI event and so a "Good update" reply or acknowledgment from you to close out the year on a positive note would be well received...

Something like that :)

On Dec 22, 2017, at 4:04 PM, Shivon Zilis <shivon@openai.com> wrote:

> FYI had a brief convo earlier this week with Altman about there being zero communication recently and he said he'd try to get things back on track.
>
> I actually think this is a great and honest summary. I'm not sure if Elon wants in or out on OpenAI, but may be good for him to acknowledge if we are keeping things open?
>
> Sorry if that's a silly comment. Just know that it took Greg and Ilya a bit of nudging given they felt shitty about their candidate getting unsold by E.
>
> Also — FYI, they are trying super hard to source and close badass female engineers (easier than ML researchers) so they are moving on that front.
>
> Begin forwarded message:
>
> > **From:** Ilya Sutskever <ilyasu@openai.com>
> > **Date:** December 21, 2017 at 10:43:22 AM PST
> > **To:** Elon Musk <erm@spacex.com>, Shivon Zilis <shivon@openai.com>, Sam Teller <steller@spacex.com>
> > **Cc:** Greg Brockman <gdb@openai.com>, Sam Altman <shga@ycombinator.com>
> > **Subject: Update**
> >
> > Going forward, we will resume sending these emails every 2 weeks.
> >
> > Dota:
> >
> > - *Finally* received more GPUs from Azure (1,000 Pascal GPUs). They are exposed by Azure in a hard-to-use way, but we'll have them up and running shortly.
> > - Fixed many 5v5 bugs, now showing strategic signs of life (split lanes, heroes roam, last hits/denies): https://www.youtube.com/watch?v=oAvoe8UBm4A&feature=youtu.be
> > - Goals:

- [Jan 31] Reproduce superhuman 1v1 shadowfiend result. Valve released a major patch which broke some of our code. Needed the new compute to arrive to rerun the 1v1 training without disrupting rest of company, and also removed hacks so code usable for 5v5. Scoreboard: https://www.dropbox.com/s/ebqbqbuj3i53sz1/Screenshot%202017-12-21%2015.39.41.png?dl=0
- [Feb 28] Superhuman 1v1 with any of 10 heroes.
- [April] Beat pros in maximally restricted 5v5 (mirror match, turbo mode, fixed 5 heroes)
- [June-August] Beat pros in unrestricted 5v5 across 64 heroes

Robotics:

- Consistent rotation of the locked cube: https://www.youtube.com/watch?time_continue=22&v=y3YdTGOLeXI (video is sped up, hand artificially slowed currently to avoid damage)
  - Policy is now robust, makes sensible use of fingers
- Much more accurate state estimation using phase space trackers. (Previous trackers were off by 1cm.)
- Early results on vision-based state estimation, will use for end-to-end training of vision-to-action model
  - Using machine learning to make simulator images look just like reality: https://www.dropbox.com/s/rmo272o77plpten/image.png?dl=0
- Goal:
  - [Feb 15] Hand solving Rubik's cube

Data center preparation:

- Machines from Shane: about 2x slower on our benchmark than our current build (partly explained by DMA, but the gap is surprising)
- RDMA over Ethernet working well: ~2us latency and 97Gbit/s throughput between two servers with full offload to the NIC — no need for InfiniBand
- Tested assembling servers (1-2 hour per, could probably get to 30 mins), believe we should outsource this — e.g. FB outsources to an ODM like Quanta
- Currently testing IPMI server management; Ceph for distributed storage
- Ready to start next buildout phase, exact plans depend on cloud vendor decisions + funding commitments

Other:

- [Jan] Releasing public contest for designing algorithms that new learn games rapidly
  - Useful for recruiting and advancing our algorithms
- A neural network that can generate text with good coherence across multiple paragraphs [three examples at the end of the email]
- Met with Henry Kissinger to discuss AI strategy (he's made AI a focus area since hearing Demis speak at Bilderberg), he wants to keep meeting

- OpenAI now has person working on long-term strategy full-time, Michael Page
- Fundraising: people find our technical case convincing, we're still weak on why not just Google build it or why a non-profit is necessary (though some believe this on their own). Nevertheless, looks like we can raise plenty of short-term capital (especially after we complete the hand). With $100M committed over the year, we can build our first data center.
    - Reid has started donating, Nicolas Berggruen ready to
    - Active convos with Herb Allen, Jaan Tallin, Vinod Khosla
    - John Elkann wants to donate robots, but not funds (working with Kissinger to set up a policy initiative and doesn't want a conflict of building)
- Learned that China's government-linked AI results are not published publicly, but instead circulated in-country on private distribution lists. Hard to know how advanced China is (they seem to win the contests these days).

Challenges:

- At NIPS, our people heard consistent negative feedback on: firings and Pieter/students leaving OpenAI, not publishing the inner workings of Dota, diversity.
- Have been interviewing many OpenAI folk to gauge morale, which has surfaced low-hanging organizational/management fruit:
    - Recruiting candidate experience, regular manager-IC meetings, regular feedback, better cross-team communications, etc
    - Addressing urgently, expect to have addressed outstanding issues by end of January

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Examples of randomly generated paragraphs from a model trained on books: It doesn't fully make sense yet, but it makes a lot more sense than anything before it. Once the generated samples make perfect sense 100% of the time, true language understanding will be around the corner.

1: you to . "

i bend to pick her up again , but she struggles a little . " no ! that 's not necessary , is it ? just for a jellyfish sting ? "

i glance down at her face . she looks alarmed .

" well , it 's not mandatory , but i 'd feel better if you got some medical attention . " i see her worrying her lip . " why ? do you have an aversion to hospitals or something ? "

" it 's not that . it 's just that ... that ... "

" what ? spit it out . "

she leans her head against my chest for a second , as if her instinct is to hide her face .

" it 's just that i 'd hate for my family to find out about this . "

" why ? it 's not like you did it on purpose . "

" i know that . they 're just ... it 's just ... it 's complicated . "

" complicated , " i repeat .

" yeah . complicated . " i slow my walk as we approach sloane 's towel . i set her down on it and crouch at her side .

" do they not know you 're here ? "

" uhhh , " she hedges , " not so much . "

" is it because of last night ? because i 'm not afraid of your brother , if that 's what you 're worried about . "

" no , no , it 's not that . it 's just that ... "

" you can tell me . whatever it is . i do n't judge . and i wo n't get mad , if that 's what you 're worried about . "

she makes a growling sound . " grrr , it 's not that . it 's just ... it 's embarrassing . "

i sit over onto my hip beside her . " all right , tell me what 's going on . "

" look , my

2: look , my family hates me for being in their lives . it makes me uncomfortable because i 've spent so much of my life hating people they did n't really know and hating themselves more . i guess that 's what it feels like like when people hate me . "

i rub her back soothingly , rubbing the spot under her towel to soothe her , but her voice is strained . " they hate you . you know that . it 's your fault that they hate your family . "

" no , it 's not my fault . i hate that you feel bad for my mom . "

she looks up at me with tears brimming in her eyes . " you ca n't hate them forever . i do n't want them hating me . and i hate myself . "

i shake my head . " it 's your choice . "

" why ? it 's my fault for hating people . " she shakes her head again . " i hate them , too . they 're the same people who made it so difficult for me and my mom and dad to raise their children , but i hate myself more than i ever hated anyone else i

hated . they hate me . but i do hate myself and i hate them too , so i hate them for being so selfish and inconsiderate , and that 's why they hate me . "

i rub my hands across her back and squeeze gently . " you do n't hate yourself or anyone else , do you ? "

she nods , and i continue to massage her back .

" it feels amazing , actually . " her shoulders relax and her breathing becomes more steady and steady .

she 's doing this on purpose . she wants me to hate them all . i want them to hate me for being who i am and for being selfish because they 're hurting someone else . but at the same time the pain is overwhelming .

she pulls away from me and looks out the window at the lake .

3: he had n't been there for a couple of minutes . "

sheriff dowling said , " he did n't have any visitors this morning . he was asleep in his bed . "

ashley said , " did you see him ? did he come in ? "

sheriff davis said quietly , " no . he stayed in his room . "

ashley stared at her .

" i thought i told you not to tell anyone about the incident . i wanted to get him out- "

" sheriff ? " ashley said . " no , thank you . that is not necessary . i do apologize for disturbing your evening . "

sheriff davis nodded . he was smiling . " it 's all right , miss. i understand why you 're concerned . "

" sheriff davis , i 'm sorry for disturbing you . i do apologize for disturbing you , but- "

the sheriff interrupted her . " you know that it would n't occur to me to disturb you at all if that were your intention , miss. "

ashley stared at him , puzzled .

sheriff davis continued . " we 've had several burglaries around the city recently , miss. i 'm afraid we 're very concerned about them . "

ashley said , " we 're concerned about these burglaries ? "

sheriff davis smiled . " i assure you , miss. "

ashley turned to the sheriff . " sheriff davis , what about these burglaries ? did they involve any strangers ? "

davis smiled . " no , miss. miss , no strangers . "

ashley turned to look at her visitor . " are you sure ? "

sheriff davis said , " miss , i do n't think that 's necessary . "

the sheriff said , " i understand . thank you for your cooperation , miss . if you would have let me- "

sheriff davis said , " we 'll talk tomorrow , miss . "

the sheriff said , " i 'll be back tomorrow . thank you for coming ```