NEWS

Community Newsletter: Animal modeling, cannabis and autism, a new editor-in-chief

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Twitter can sometimes feel like a zoo, and this week, two behavior-modeling studies had our feeds wild with excitement.

Up first was a **new preprint** shared by **Benjamin Cowley**, a computational neuroscientist at Princeton University, in which he and his colleagues used a deep neural network, or a 'deep net,' to model the visual system of a fruit fly. "Deep nets are great at predicting visual neurons. Yet, they are unable to tell us which artificial neuron directly corresponds to a biological neuron… until now!" Cowley wrote.

His results showed "that visual projection neurons at the interface between the eye and brain form a distributed population code that collectively **sculpts social behavior.**"

> Excited to share a new manuscript!
>
> Deep nets are great at predicting visual neurons. Yet, they are unable to tell us which artificial neuron directly corresponds to a biological neuron… until now!**https://t.co/nQJ4f7K29c**
>
> (yes, that is indeed a fictive female fly, good guess!) **pic.twitter.com/PSkexLJldZ**
>
> — Benjamin Cowley (@BenjoCowley) **July 21, 2022**

"Here, biological and artificial knockouts predict neural activity and distributed function in complex

brain areas. **I am dazzled**," tweeted **Cori Bargmann**, a neuroscientist at Rockefeller University in New York City.

> Classical genetics uses knockouts to infer functional relationships. Here, biological and artificial knockouts predict neural activity and distributed function in complex brain areas. I am dazzled. **https://t.co/r1HVxSkxKK**
>
> — Cori Bargmann (@betenoire1) **July 22, 2022**

Dan O'Shea, a neuroscientist at Stanford University in California, was also excited about the paper, highlighting that "it underscores the tractability of the **fly visual system**."

> This is such an impressive experimental and computational paper, and it underscores the tractability of the fly visual system. So cool! Congratulations! **https://t.co/uXt3xdV9Xd**
>
> — Dan O'Shea (@djoshea) **July 22, 2022**

There were many other tweets we don't have room to share, but they had one thing in common: big excitement about this work and its implications for the future of neuroscience.

Other fly-modeling work had Twitter buzzing, too — and this one also included mice. The team in question announced the release of a new dataset "from real-world behavioral neuroscience experiments."

The dataset "consists of mouse (9 mil frames) and fly (4 mil frames) social interactions for studying behavioral representation learning!" tweeted **Jennifer Sun**, a graduate student at the California Institute of Technology in Pasadena.

> We are excited to release the dataset from the 2022 MABe Challenge! ????????
>
> Our dataset consists of mouse (9 mil frames) and fly (4 mil frames) social interactions for studying behavioral representation learning!

> Paper: **https://t.co/QV1KynfVkR**
> Challenge: **https://t.co/deeqxcf61L pic.twitter.com/cnq4fpcZNl**
>
> — Jennifer J. Sun (@JenJSun) **July 22, 2022**

Ann Kennedy, assistant professor of neuroscience at Northwestern University in Chicago, Illinois, who contributed to the dataset and was featured in a ***Spectrum* profile article** this week, shared her excitement in a quote tweet.

> Super excited to share the dataset + evaluators from this year's Multi-Agent Behavior Challenge on unsupervised + self-supervised representations of behavior!
>
> We also share the winning submissions: three teams used transformers (Perceiver, GPT, and BERT), one used Pointnet. **https://t.co/5S6EpDjBAh**
>
> — Ann Kennedy (@Antihebbiann) **July 22, 2022**

This may sound like a far-out concept, but back-and-forths on Twitter can be peaceful, polite and productive. For proof, we offer up one such conversation sparked by Twitter user **@drdebah**, assistant professor of psychology at the University of New Orleans in Louisiana, after she tweeted out information about participating in a survey on **cannabis use in autism**.

> "Marijuana may or may not be helpful to autistic young people, although autistic adults who use it frequently have positive things to say. If nothing else, the logical thing to do would be to study it more."