National Institutes of Health
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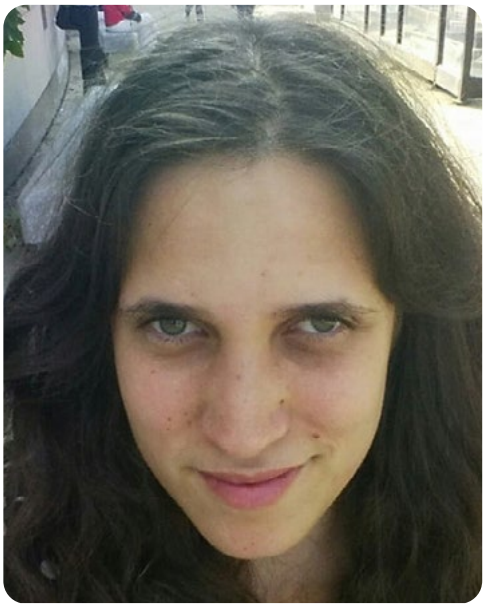
figshare

Using the NIH Figshare instance to make fMRI and eye movement data associated with a publication openly available

Dr. Michal Ramot is an intramural researcher and visiting fellow at the National Institute of Mental Health (NIMH). She and her colleagues in Alex Martin's research group on Cognitive Neuropsychology have published a collection of neuroimaging research in the NIH Figshare instance that supports a recent publication in Communications Biology describing the neural mechanisms of social processing in the brain.



Dr. Michal Ramot

The study aimed to elucidate the systems of the brain involved in social processing and investigated these processes in both typically developing individuals and individuals with autism, who are frequently impaired at social processing tasks such as reading social cues and orienting to faces. To investigate this,

Michal and her colleagues asked participants to watch movie clips of social interactions both inside and outside an MRI scanner. They collected data on subjects' brain activation as well as their eye movements as they watched these social movie scenes. The datasets link neural activity (fMRI), with behavior (eye movements), thus identifying networks involved in social orienting during movie viewing. Combining the two datasets also allowed Michal and her colleagues to disassociate different aspects of social processing and describe two distinct brain networks involved in social orienting and the ability to infer the mental states of others.

The datasets that were made publicly available in the NIH Figshare instance include functional magnetic resonance imaging (fMRI) data and eye tracking data for 98 participants including 36 individuals with Autism Spectrum Disorder and 62 typically developing individuals. The datasets are each assigned their own citable Digital Object Identifier (DOI) and include descriptive metadata and usage metric tracking at the item level. Michal also created a Collection in NIH Figshare to group all of these datasets together providing a single citation and DOI to all of the data supporting this publication. These datasets are associated with a recent preprint in BioRxiv and subsequent publication in Communications Biology. Michal was able to link to both the preprint and the publication DOIs in the reference field of her collection and because of an integration with ReadCube, the full publication can be viewed directly from the collection page.

Michal has shared her data openly for other research projects using other systems but found them "not very easy to use to upload data and the metadata wasn't well organized," said Michal. "It also seemed like the software was just for fMRI data and we also had eye movement data for this research project. I wanted to share both datasets together." After learning about the NIH Figshare instance, Michal thought it would be a suitable place for the fMRI and eye movement data to sit side-by-side. "It looked very easy to use, very accessible, and the data seemed well-organized so I thought I would try it."

As a generalist repository resource, the NIH Figshare instance accepts any file types and allows for a variety of file groupings including many files per item or group items in collections. This is ideal for heterogeneous datasets that may come from many different methods or have other supporting research products such as code, stimulus sets, survey instruments or protocols that need to be linked together. The large storage allotment of NIH Figshare, with an initial quota of 500GB per user and the ability to request more, is also ideally suited to imaging modalities such as fMRI that produce large files.

To learn more visit:
nih.figshare.com/authors/Michal_Ramot/7866695

References:
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