**Data and code used for making Extended Data Fig. 7**

**Folder: ExtDataFig7a-n**

Analysis

* ExtDataFig07\_Example\_F.m: Code for plotting images for the example images in Extended Data Fig. 7a.
* TS\_Img.mat: Time stamps of calcium imaging.
* TS\_OptStimImg.mat: Timings of optogenetic stimulation during calcium imaging.
* ExtDataFig07\_Example\_AveSong.m: Code for plotting images for the example recordings in Extended Data Fig. 7b,d,g,i.
* ExtDataFig06\_AveSong.m: Code for plotting the population averaged ΔF/F for pulse and sine song around song-type in Extended Data Fig. 7c,e,h,j.
* ExtDataFig07\_SongTypeRespDiffHist.m: Code for plotting the histogram of the mean difference in ΔF/F between pulse and sine song during song-type transitions for the voxels which changed ΔF/F depending on song type in Extended Data Fig. 7k,m.

Data/Summary\_GENOTYPE

* EthogramComb.mat: File containing the time course of pulse/sine songs. Row: fly ID; Column: time bins at the resolution of microphone recording (1 kHz).
* EthogramCombImg.mat: Same as EthogramComb.mat but the time resolution of calcium imaging.
* F2d\_\*: Calcium imaging data (F for each voxel) for each experiment.
* StimComb.mat: Optogenetic stimulation strength for each trial.
* AveSongComb.mat: Average ΔF/F for pulse and sine song around song-type for each recording.
* SongTypeP.mat: Variables for running Fig05\_SongTypeRespDiffHist.m.