# FED3 Viz

a GUI for plotting FED3 data

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## What is FED3?

FED3 is the [3rd version of the Feeding Experimentation Device](https://hackaday.io/project/106885-feeding-experimentation-device-3-fed3), an open-source, home-cage feeding device for mouse operant behavioral tasks. FED3 was developed in the [Kravitz Lab](https://kravitzlab.com/) in order to run high-throughput, inexpensive experiments on reward and learning.

## What is FED3 Viz?

**FED3 Viz** is software for graphing data produced from FED3 devices. FED3 Viz is written in Python using the tkinter library. FED3 Viz is meant to create a quick & easy method for visualizing FED3 data without having to edit the raw data.

## Current Features

* Various graphs to visualize:
  + pellet retrieval
  + correct and incorrect pokes
  + intervals between pellet retrieval
  + pellet retrieval time
  + meal sizes
  + progressive ratio breakpoints
  + circadian patterns of activity
  + grouped averages for multiple devices
  + motor turns & battery life
* Toolbar for live plot editing (from [matplotlib](https://matplotlib.org/3.1.1/users/navigation_toolbar.html))
* Savable code and data for each plot
* Sortable viewer showing recording properties
* Summary statistics
* Group labels for averaging data
* Savable settings
* Savable "Sessions" (for reloading files, plots, and settings)
* Use date cutoffs to filter data plotted
* Concatenate data (from single recordings split over multiple files)

See the Releases tab for specific notes about new each version.

## Gallery

FED3 Viz uses primarily matplotlib and seaborn for visualizations.

## Installation

FED3 Viz can either be run from a packaged application file, or from a Python interpreter. Specific instructions for installation and system requirements can be found [here](https://github.com/earnestt1234/FED3_Viz/blob/master/Installation.md).

There is a manual for FED3 Viz which covers the use of the program once it is installed; it can be found [here](https://github.com/earnestt1234/FED3_Viz/blob/master/Manual.md), or [here as a pdf](https://github.com/earnestt1234/FED3_Viz/blob/master/pdfs/Manual.pdf).

## Updates

Please report any issues, suggestions, or comments about FED3 Viz [through GitHub](https://github.com/earnestt1234/FED3_Viz/issues) or the [FED3 Google Group](https://groups.google.com/forum/#!forum/fedforum). FED3 Viz has no updates scheduled, though improvements may still be made to address bugs and feature requests. Thank you to those inside and [outisde the lab](https://groups.google.com/forum/#!topic/fedforum/YhF0pzMGD9c) who have provided suggestions and feedback for FED3 Viz!

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