

Floodlight Analysis Tool (“FAT”) v0.5: A Tutorial

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Floodlight Analysis Tool (“FAT”) is available as a web application and as a stand-alone program, both of which will likely be accessible through the project’s web page,

<https://floodlightanalysis.com/>. The most recent version of this tutorial is available at

<https://floodlightanalysis.com/pdf/>. I have no conflicts of interest to disclose.

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Abstract

This tutorial introduces and provides instructions on how to use Floodlight Analysis Tool (“FAT”), which was developed to help researchers quickly and easily conduct floodlight analyses (Aiken et al., 1991; Johnson & Neyman, 1936; Spiller et al., 2013). Although the current version only supports a $2 \times$ Continuous design, it is available as a web application and as a stand-alone program, both of which can be accessed through the tool’s web page:

<https://floodlightanalysis.com/>

Keywords: floodlight analysis, spotlight analysis, interaction analysis, Johnson and Neyman points, research methods

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Introduction

What Is Floodlight Analysis Tool (“FAT”)?

Floodlight Analysis Tool (hereafter, *FAT*) helps researchers conduct floodlight analyses quickly and easily and does not require expertise in coding (e.g., R) or familiarity with statistical analysis programs (e.g., SPSS). The current version of FAT only supports a $2 \times$ Continuous design, but we plan to make further developments to the program depending on user demands.

Background on Floodlight Analysis (or Spotlight Analysis)

Unless you are already familiar with floodlight analysis and spotlight analysis, we encourage you to learn about them by reading the following papers (in the order of arguable relevance): Spiller et al. (2013), Aiken et al. (1991), Johnson & Neyman (1936).

FAT is developed in R, the programming language (R Core Team, 2021) and relies on functions contained in multiple R packages, including (but possibly not limited to) *interactions* (Long, 2019), *kim* (Kim, 2022), *data.table* (Dowle & Srinivasan, 2021), and *ggplot2* (Wickham, 2016).

First Thing to Do: Get the Most Recent Version of the Instructions

Ensure that these instructions are the most recent version by visiting the instructions web page: <https://floodlightanalysis.com/pdf/>. During the early development stage of FAT (e.g., in November 2022, at the time of this writing), the instructions may be updated frequently to reflect relevant updates to FAT.

Web Application of FAT

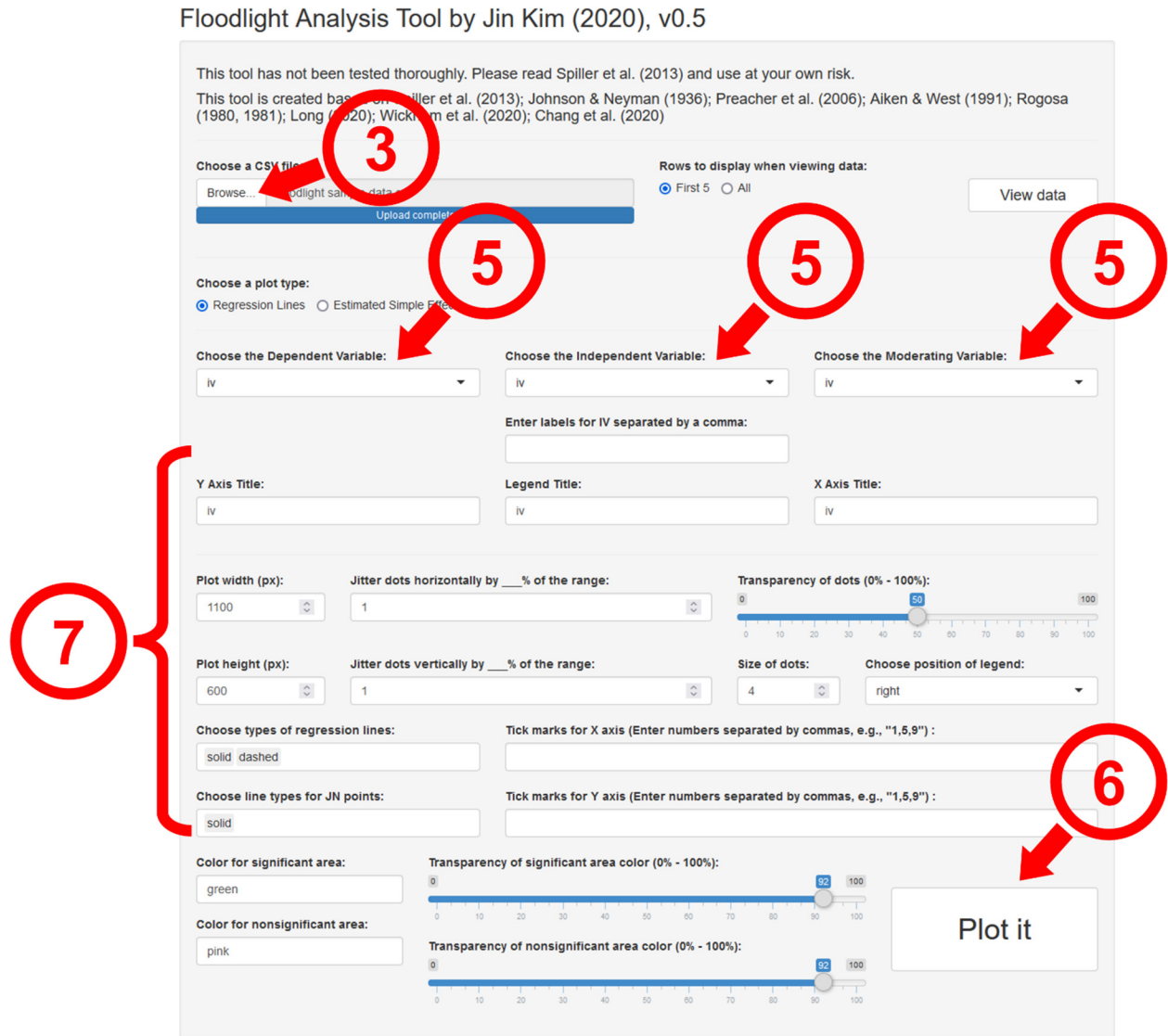
Instructions for Using the Web Application of FAT

To use the web application of FAT, please follow these instructions:

1. Navigate to <https://floodlightanalysis.com/> and click on the Web App link (the second bullet point as of November 15, 2022). The web application can take more than 10 seconds to load. Please wait until the web application loads.
2. Ensure (1) that your data set is in a .CSV file format and (2) that the three focal variables (the independent variable, dependent variable, and moderator variable) are in three separate columns, each of which contains *contain only numeric values*—not character strings!
3. Once the web application has loaded, upload your data set by clicking “Browse...” (see #3 in Figure 1).
4. After uploading the data set, you will see the dropdown menus for choosing the independent variable, dependent variable, and moderator variable for a floodlight analysis.
5. Choose the appropriate variables on the dropdown menus (see #5 in Figure 1 below).
6. Click “Plot it” (see #6 in Figure 1 below).
7. Make adjustments to the plot as needed (see #7 in Figure 1 below).

Figure 1

Floodlight Analysis Tool (“FAT”) Interface



Stand-Alone Program of FAT

Requirements

Running the stand-alone program requires a Windows operating system and a web browser.

Instructions for Using the Stand-Alone Program of FAT

To use the stand-alone program of FAT, please follow these instructions:

1. Navigate to <https://floodlightanalysis.com/> and click on the Standalone Program download link (the third bullet point as of November 15, 2022). The web application can take more than 10 seconds to load. Please wait until the web application loads.
2. From the Zenodo page, download the file, “floodlight_v_0_4.zip” and unzip (i.e., extract) it by right-clicking and selecting “Extract All.”
3. In the folder containing the extracted files and folders, locate the file “Run this File.vbs” and execute it. This will open FAT on a local web browser.
4. Follow Steps 2-7 of the Instructions for Using the Web Application in the previous section.

Conclusion

Help Us Improve FAT

If you (1) find FAT useful in any way, (2) run into errors or find bugs, (3) want any kind of additional features, (4) have other suggestions for improvements, or (4) have any questions about it, we would like to hear about it. Please email the author at jin.m.kim@yale.edu.

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