NCAP (Neuroscience Cloud Analysis Platform) Web Interface
Minimum Viable Product Documentation

Motivation: We currently serve neuroscience researchers with a variety of different data analyses through a software-as-a-service model. At the moment, we provide this service through AWS S3, allowing users to trigger automated data analyses simply by dragging and dropping in different files through the browser cyberduck. We would like to streamline this process and serve it through a website.

Current Model:
Sign in: Users download the application cyberduck, login to AWS S3 with provided IAM credentials through cyberduck, and follow separately provided instructions for how to navigate the cyberduck user interface.
Upload:

1) Users choose what analyses to use by navigating to the corresponding S3 bucket [caiman-ncap,dlc-ncap,or loca-pmd-ncap] and selecting the folder corresponding to their lab. This folder contains three directories: “inputs”, “results”, and “logs”.
2) Users drag-and-drop data [usually videos] and parameter files [usually json] into the “inputs” folder.
3) Users drag and drop a special “*submit.json” file containing path to data and config into the “inputs” folder, which triggers AWS Lambda and starts data processing.

Results: Once this is done, users can go to the “results” folder and await results that are automatically deposited.

Desired Model:
Sign in: Users go to our website and login with IAM credentials.
Upload:

1) Users select the algorithm they would like to use from a dropdown menu.
2) Users drag-and-drop data and parameter files into an onscreen window [connected to S3]
3) Users select data to process via point and click, and start processing with a button click.

Results: Results appear in a different window, available to download.

Desired Features:

1) Website Design:
    a) Simple clean html5+css
    b) Static fields for sign up, login, and usage instructions.
    c) Easily extensible to additional analysis algorithms
2) Signup/Login:
    a) Signup request sends email to admin [who will generate AWS credentials]
    b) Signup request requires consent for data policy agreement
    c) Login uses generated AWS credentials
3) Data transfer:

    a) Navigable connection to AWS S3 [S3 bucket contents are visible to user]
    b) Access governed by user's IAM credentials
    c) Drag-and-Drop Upload
    d) Downloadable Results
    e) [Optional] Dropdown menu to select different S3 Buckets for different analyses
    f) [Optional] Automatically upload "submit.json" file through point and click interface.
4) Admin:
    a) Ability to deny/permit individual users access to data transfer.
    b) Ability to monitor usage on individual user level.