

API for BDA Service

Max Bloomfield

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1 /Admin

All routes require 'admin' permission in access control list of user.

GET	/Admin/Init <i>initializes service</i>
Parameter	
username	admin username
password	admin password
server_secret	One time code for initialization of server, set at launch
Response application/json	
200	ok
	<code>Initialized</code>
500	Failed to Initialize
	<code>Internal Server Error</code>

POST	/Admin/create_user <i>creates user</i>
Parameter	
username	new username
password	new password
access_list	list of permissions for new user
Response application/json	
200	ok
	<code>User {username} created.</code>
500	Internal Server Error
	<code>Username already taken</code>
500	Internal Server Error
	<code>{access_list} not a valid access level</code>

POST	/Admin/delete_user <i>deletes user</i>
Parameter	
username	new username
Response	application/json
200	ok
	Deleted user {username}.
500	Internal Server Error
	No such user

POST	/Admin/set_password <i>sets password for user</i>
Parameter	
username	username to operate on
password	new password
Response	application/json
200	ok
	Updated password for {username}.
500	Internal Server Error
	No such user

POST	/Admin/set_access_list <i>sets access control list for user</i>
Parameter	
username	username to operate on
access_list	new access control list
Response	application/json
200	ok
	Updated access_list for {username} to {access_list}.
500	Internal Server Error
	No such user as {username}

2 /User

All requests except "/User/get_token" require bearer token. All GET/POST method routes require 'user' permission in access control list of user.

	/User/login <i>redirects to login form</i>
Parameter	
<i>no parameter</i>	
Response	application/json
<i>no response</i>	

	/User/logout <i>logs out current user, voids token</i>
Parameter	
<i>no parameter</i>	
Response	application/json
<i>no response</i>	

POST	/user/set_password <i>sets password of current user</i>
Parameter	
username	new username
oldpass	old password
newpass	new password
Response	application/json
200	ok
	<div></div> <div>Password updated.</div>
401	Unauthorized
	<div></div> <div>Authorization failed.</div>
401	Unauthorized
	<div></div> <div>Old password does not match.</div>
403	Forbidden
	<div></div> <div>User {user} cannot change password for user {username}.</div>

POST	/User/get_token <i>Get authorization token</i>
Parameter	
username	username to validate
password	user password
Response	application/json
200	ok
	<pre> token : bearer token expiration_date: expiration time of token message: Success! </pre>
200	ok
	<pre> cookie set: 'refresh_token' </pre>
403	Forbidden
	<pre> Access denied </pre>

POST, GET	/User/refresh_token
<i>get new auth_token with refresh_token</i>	
Parameter	
cookie 'refresh_token'	
Response application/json	
200	ok
	<pre>token : bearer token expiration_date: expiration time of token message: Success!</pre>
200	ok
	<pre>cookie set: 'refresh_token'</pre>
403	Unauthorized
	<pre>Unavailable</pre>

3 /Train

All requests require bearer token authenticating current user. All requests require 'train' permission in access control list of current user.

POST	/Train/create_MKO <i>Create initial MKO</i>
Parameter	
username	username for result caching
model_name	name for model
Response	application/json
200 ok	
	<code>claim_check : claim check to retrieve MKO</code>
400 Bad Request	
	<code>Badly formed request: {error message}</code>

POST	/Train/fill_mko <i>attach data to mko</i>
Parameter	
username	username for result caching
model_name	name for model
dataspec	specification for data location (JSON)
topology	neural network topology
hyper_parameters	neural network hyperparameters
mkodata	mko, as initialized with create_MKO
Response	application/json
200	ok
	<code>claim_check : claim check to retrieve MKO</code>
400	Bad Request
	<code>Badly formed request: {error message}</code>

POST	/Train/train <i>schedule training of MKO</i>
Parameter	
username	username for result caching
model_name	name for model
mkodata	mko, as processed with fill_mko
smip_auth	JSON object with 'token' and 'url' providing access to SMIP
Response	application/json
200	ok
	<pre>claim_check : claim check to retrieve MKO</pre>
400	Bad Request
	<pre>Badly formed request: {error message}</pre>

GET	/Train/describe_mko <i>describe contents of MKO</i>
Parameter	
mkodata	mko, as processed with fill_mko
Response	application/json
200	ok
	<pre>JSON object describing contents of MKO</pre>
400	Bad Request
	<pre>Badly formed request: {error message}</pre>

4 /Results

All requests require bearer token authenticating current user. All requests require 'train' or 'infer' permission in access control list of current user.

GET	/Results/get_result <i>retrieve result of training or analysis</i>
Parameter	
username	username associated with cached result
claim_check	claim check previously returned by train or analysis
Response application/json	
200 ok	<div>base64, utf-8 encoded binary result or array of results</div>
204 No content	<div>/ {username} / {claim_check} not found.</div>
401 Unauthorized	<div>Not valid claim check for user { username}</div>

GET	/Results/get_status <i>check status of result</i>
Parameter	
username	username associated with cached result
claim_check	claim check previously returned by train or analysis
Response	application/json
200	ok
	String representation of floating point number in <code>[0,1]</code> indicating fraction complete
204	No content
	<code>/ {username} / {claim_check}</code> not found.
401	Unauthorized
	Not valid claim check for user <code>{ username }</code>

GET	/Results/get_eta <i>check projected time to completion</i>
Parameter	
username	username associated with cached result
claim_check	claim check previously returned by train or analysis
Response	application/json
200	ok
	String representation of floating point number indicating number of seconds to completion
204	No content
	/ {username} / {claim_check} not found.
401	Unauthorized
	Not valid claim check for user {username}

5 /Infer

All requests require bearer token authenticating current user. All requests require 'infer' permission in access control list of current user.

POST	/Infer/sample <i>directly sample using MKO</i>
Parameter	
mko	MKO, as return by Service
inputs	base64 encoded numpy array containing input point at which to sample
n _{samples}	Number of samples to return
as_csv	(defaults to True) [True/False] whether to return results as comma-separated values in string form
precision	number of digits of precision (default: 8) to return if CSV
Response application/json	
200 ok	<pre>outputs: base64, utf-8 encoded array of {n_samples} samples at {input}</pre>
409 Conflict	<pre>Sampler error</pre>

6 /Analyze

All requests require bearer token authenticating current user. All requests require 'analyze' permission in access control list of current user.

POST	/Analyze/cloudplot <i>create cloudplot using provided MKO</i>
Parameter	
username	username for result retrieval
mko	trained MKO
data _{table}	base64 encoded numpy array containing data which to plot against predictions
n _{samples}	Number of samples to return
error_bars	(defaults to False) [True/False] whether to plot all samples or means and error bars
Response	application/json
200	ok
	<code>claim_check: claim_check to retrieve plots</code>
400	Bad request
	<code>Sampler error</code>

POST	/Analyze/histogram <i>create histograms using provided MKO</i>
Parameter	
username	username for result retrieval
mko	trained MKO
data _{table}	base64 encoded numpy array containing inputs at which to construct histograms
n _{samples}	Number of samples to use
n _{bins}	Number of bins in histograms
Response	application/json
200	ok
	<code>claim_check: claim_check to retrieve plots</code>
400	Bad request
	<code>Sampler error</code>

POST	/Analyze/history <i>create plot of training history</i>
Parameter	
username	username for result retrieval
mko	trained MKO
Response	application/json
200	ok
	<code>claim_check: claim_check to retrieve plot</code>
400	Bad request
	<code>Sampler error</code>

POST	/Analyze/integrate <i>integrate table of quantity of interest against PDF to obtain expectation value of QoI</i>
Parameter	
username	username for result retrieval
mko	trained MKO
data _{table}	base64 encoded numpy array containing inputs at which to construct PDF
function _{table}	base64 encoded numpy array representing function to integrate
n _{samples}	Number of samples to use
Response	application/json
200	ok
	<code>claim_check: claim_check to retrieve plots</code>
400	Bad request
	<code>Sampler error</code>

7 /Logging

All requests require bearer token authenticating current user. All requests require 'logs' permission in access control list of current user.

POST	/Logging/viewall <i>Display all logs from server</i>
Parameter	
no parameters	
Response application/json	
200	ok
	<div>Time stamped list of server events</div>
403	Forbidden
	<div>User not authorized to view resource</div>