

# Deep Learning Model Sharing Platform

- Yundi Wang 10469470
- Hechen Wang 10464942
- Shaocheng Wang 10465036
- Qingyao Fan 10433241
- Xinming Yang 10458564

## Users

The **Users** collection is used to store all users' info about our project. This collection will allow users to log in & add/delete/update their profile and also link data sources & submit models. This collection includes an array of the data which the user linked and an array of the ID of models the user has uploaded to our platform.

```
{
  "_id": "6345dfdb2498825d56a108a8",
  "first_name": "Darin",
  "last_name": "coco",
  "email": "darincoco@gmail.com",
  "gender": "m",
  "location": "New Jersey",
  "organization": "Stevens Institute of Technology",
  "hashedPassword": "5f4dcc3b5aa765d61d8327deb882cf99",
  "datas": ["6365b8d96706b16a8323bc09",
"6365bb7e2eed20449deccfb4"],
  "models": ["6365bbd32eed20449deccfb5",
"6365bbe32eed20449deccfb6"]
}
```

Name	Type	Description
_id	string	A globally unique identifier to represent the user
first_name	string	The first name of the user

last_name	string	The last name of the user
email	string	The e-mail of the user
gender	string	The gender of the user ( <i>Provide enough options for gender diversity</i> )
location	string	The name of the state or province the user located
organization	string	The company, group or organization the user belong
hashedPassword	string	The password for log in ( <i>Complexity Check is required</i> )
datas	array	An array stores the data_ids which users linked
models	array	An array stores the model_ids which users uploaded

## Model

The **Model** collection is used to store all models uploaded by users. This collection will allow users to add/delete/update their models. And also stores comments that related this model. This collection contains: an array of the link which describe the data resource, an array of the users which list author's ID and collaborator's ID, an array of data stores the list of operation result's ID, and also a sub-document of comment objects, the objects will store the comment ID, the user ID of the commenter and the comment content.

```
{
  "_id": "6345dfdc2498825d56a108aa",
  "name": "DNN-150-46",
  "category": "classification",
```

```

    "description": "DNN model for news classification.",
    "link": ["https://github.com/tiny-dnn/tiny-dnn",
"https://github.com/oneapi-src/oneDNN"],
    "structure": "nn.Linear(in_features=1000,
out_features=150),nn.ReLU(),nn.Linear(in_features=150, out_features=46)",
    "input": "in_features = 1000",
    "output": "out_features = 46",
    "users": ["634eeaf933db01bdfafe11e1", "634eeaf933db01bdfafe11e2"],
    "data": ["634eeaf933db01bdfafe11de"],
    "comments": [
        {
            "_id": "634eeaf933db01bdfafe11df",
            "user_id": "634ef245b31f9e3c63ebf146",
            "comment": "good model, easy to use."
        }
    ]
}

```

Name	Type	Description
_id	string	The ID of the model
name	string	The name of the model
category	string	The category of the models, such as Classification, Regression, CV, NLP etc.
description	string	A brief description of the model ( <i>With word count limit</i> )
link	array	An array of the link ( <i>string type</i> ) which describe the data resource such as “Github Link: ...”, “Colab Link: ...”, etc.

structure	string	The structure used by this model, such as linear, ReLU, etc.
input	string	The feature size of this model's input
output	string	The feature size of this model's output
users	array	An array of the users which list author's ID and collaborator's ID
data	array	An array of data stores the list of operation result's ID
comments	sub-document	A sub-document of comment objects, the objects will store the comment ID, the user ID of the commenter and the comment content

## Data

The **Data** collection is used to store all data a model linked by users. This collection will allow users to add/delete/update a basic description (Include data length, features, source and content) of the data used. And also stores comments that related this data. This collection contains: an array of features which list the features of data content, an array of objects named raw which stores the data content, and also a sub-document of comment objects, the objects will store the comment ID, the user ID of the commenter and the comment content.

```
{
  "_id": "634eeaf933db01bdfafelle0",
  "name": "Boston Housing Data",
  "description": "Concerns housing values in suburbs of Boston.",
```

```

    "features": ["CRIM", "ZN", "INDUS", ...],
    "length": 506,
    "source":
"https://www.cs.toronto.edu/~delve/data/boston/bostonDetail.html",
    "raw": [
      {
        "_id": "634ef244b31f9e3c63ebf13c",
        "CRIM": 0.02731,
        "ZN": 0.00,
        ...
      }
      {
        "_id": "634ef245b31f9e3c63ebf143",
        "CRIM": 0.02729,
        "ZN": 0.00,
        ...
      }
    ],
    "comments": [
      {
        "_id": "634ef245b31f9e3c63ebf144",
        "user_id": "634ef245b31f9e3c63ebf145",
        "comment": "Classic dataset."
      }
    ]
  }

```

Name	Type	Description
_id	string	The ID of data
name	string	The name of the data
description	string	A brief description of the data ( <i>With word count limit</i> )

features	array	An array of features which list the features of data content
length	number	The data length
source	string	The source of the data
raw	array	An array of objects ( <i>JSON files</i> ) named raw which stores all raw data content
comments	sub-document	A sub-document of comment objects, the objects will store the comment ID, the user ID of the commenter and the comment content

## Model\_Comment

The **Model\_Comment** collection is a sub-document of the model collection.

```
"comments": [
  {
    "_id": "634eeaf933db01bdfafe11df",
    "user_id": "634ef245b31f9e3c63ebf146",
    "comment": "good model, easy to use."
  }
]
```

Name	Type	Description
_id	string	The comment ID

user_id	string	The name of the user who posted this comment
comment	string	The comment content ( <i>Text</i> )

## Data\_Comment

The **Data\_Comment** collection is a sub-document of the data collection.

```

"comments": [
  {
    "_id": "634ef245b31f9e3c63ebf144",
    "user_id": "634ef245b31f9e3c63ebf145",
    "comment": "Classic dataset."
  }
]

```

Name	Type	Description
_id	string	The comment ID
user_id	string	The name of the user who posted this comment
comment	string	The comment content ( <i>Text</i> )