Alfred

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Structure du dataset Alfred

- **Alfred :** plus de 8 000 exemples annotés par des experts
    - **Différents jeu de données :**
        - **Lite :** 35Mo
            - **Celui que j'ai regardé pour l'instant**
            - **Prochaine étape :** généraliser les analyses aux plus grands jeux de données
        - **Modeling QuickStart :** 17Go
        - **Full :** 109Go

Types d'instructions

- 7 types d'instructions
  - pick two obj and place:
  - pick and place simple :
  - pick heat then place in recep:
  - pick cool then place in recep:
  - pick and place with movable recep:
  - pick clean then place in recep:
  - look at obj in light:

Structure de fichiers

- Lien du jeu de données : https://github.com/askforalfred/alfred/tree/master/data/json_2.1.0
- Structure : *task_type - object - movableReceptacle - receptacle - sceneNum /trial_ID/***traj_data.json**
- **traj_data.json :** pour chaque exemple du jeu de donnée
    - **Trajectoire :**
        - **Séquence d'actions expertes**
        - **Observations d'images correspondantes**
        - **Annotations linguistiques décrivant des segments de la trajectoire**
- Contient différentes informations relatives à l'instruction

Contenu d'un fichier

- **Méta-informations sur l'instruction :** identifiant, type, paramètres
- **Informations sur la scène :** liste des objets, leurs positions, etc;
- **Annotations de l'instruction par les experts:** 3 annotations généralement
  - **Annotation** :
    - Description de la l'instruction en langage naturel (**input ?)**
    - Liste des étapes élémentaires de l'instruction(**output ?)**
    - Votes (0 ou 1)
- Et d'autres informations … : images, etc.
- Pour le projet : regarder le type d'instruction, les informations sur la scène et les annotations d'experts.

Contenu d'un fichier : Informations sur la tâche

```
['task_id'] = "trial_00003_T20190312_234237"          (unique trajectory ID)
['task_type'] = "pick_heat_then_place_in_recep"       (one of 7 task types)
['pddl_params'] = {'object_target': "AlarmClock",     (object)
                   'parent_target': "DeskLamp",        (receptacle)
                   'mrecep_target': "",                (movable receptacle)
                   "toggle_target": "",                (toggle object)
                   "object_sliced": false}            (should the object be sliced?)
```

Contenu d'un fichier : Informations sur la scène

```
['scene'] =  {'floor_plan': "FloorPlan7",          (THOR scene name)
              'scene_num' : 7,                       (THOR scene number)
              'random_seed': 3810970210,             (seed for initializing object placements)
              'init_action' : <API_CMD>,             (called to set the starting position of the agent)
              'object_poses': <LIST_OBJS>,           (initial 6DOF poses of objects in the scene)
              'object_toggles': <LIST_OBJS>}         (initial states of togglable objects)
```

Informations sur la scène : exemple

```
"scene": {
    "dirty_and_empty": false,
    "floor_plan": "FloorPlan2",
    "init_action": {
        "action": "TeleportFull",
        "horizon": 30,
        "rotateOnTeleport": true,
        "rotation": 180,
        "x": -2.75,
        "y": 0.9009992,
        "z": 3.0
    },
},
```

```
"object_poses": [
    {
        "objectName": "Potato_5e728867",
        "position": {
            "x": -1.874256,
            "y": 0.9352317,
            "z": -1.61003125
        },
        "rotation": {
            "x": 0.0,
            "y": 0.0,
            "z": 0.0
        }
    },
```

Contenu d'un fichier : Annotations du langage

```
['turk_annotations']['anns'] =
        [{'task_desc': "Examine a clock using the light of a lamp.",
          'high_descs': ["Turn to the left and move forward to the window ledge.",
                            "Pick up the alarm clock on the table", ...],
          'votes': [1, 1, 1]
         },
         ...]
```

Contenu d'un fichier : Démonstrations d'experts

```
['plan'] = {'high_pddl':
            ...,
            ["high_idx": 4,                         (high-level subgoal index)
             "discrete_action":
                 {"action": "PutObject",            (discrete high-level action)
                  "args": ["bread", "microwave"],   (discrete params)
              "planner_action": <PDDL_ACTION> ],    (PDDL action)
             ...],

        'low_actions':
            ...,
            ["high_idx": 1,                         (high-level subgoal index)
             "discrete_action":
                 {"action": "PickupObject",         (discrete low-level action)
                  "args":
                      {"bbox": [180, 346, 332, 421]} (bounding box for interact action)
                       "mask": [0, 0, ... 1, 1]},    (compressed pixel mask for interact action)
              "api_action": <API_CMD> ],            (THOR API command for replay)
             ...],
          }
```

Contenu d'un fichier : Images

```
['images'] = [{"low_idx": 0,            (low-level action index)
               "high_idx": 0,            (high-level action index)
               "image_name": "000000000.jpg"}   (image filename)
              ...]
```

Exemples : pick two obj and place

```
"task_id": "trial_T20190909_080302_174780",
"task_type": "pick_two_obj_and_place",
"turk_annotations": {
    "anns": [
        {
            "assignment_id": "AJQGWGESKQT4Y_3DIP6YHAPFJED7Y7NO7YYHPDLY78EH",
            "high_descs": [
                "Turn to the left and face the toilet paper holder to the left of the toilet.",
                "Pick the toilet paper roll up from the holder.",
                "Turn to stand on the right side of the toilet.",
                "Put the toilet paper on the back of the toilet.",
                "Cross the room to stand in front of the sink on the left.",
                "Open the cabinet on the bottom left and pick up the toilet paper and shut the cabinet.",
                "Cross the room to stand on the right side of the toilet.",
                "Put the toilet paper on the back of the toilet."
            ],
            "task_desc": "Put two rolls of toilet paper on the back of a toilet.",
            "votes": [
                1,
                1,
                1
            ]
        },
```

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Exemples : pick cool then place in recep

```
"task_id": "trial_T20190909_063844_274181",
"task_type": "pick_cool_then_place_in_recep",
"turk_annotations": {
    "anns": [
        {
            "assignment_id": "A1MKCTVKE7J0ZP_3CN4LGXD50FB0BSWBMTFO81O1O2Y41",
            "high_descs": [
                "Move forward, then turn right at the counter adjacent to the fridge.",
                "Pick up the tomato on the counter.",
                "Go to the fridge to your left.",
                "Open the fridge, put the tomato inside, chill it, then take the tomato out.",
                "Return to the counter to your right.",
                "Place the tomato on the counter."
            ],
            "task_desc": "Put a cool tomato on the counter.",
            "votes": [
                1,
                1,
                1
            ]
        },
```

Exemples : pick clean then place in recep

```
"task_id": "trial_T20190907_151802_277016",
"task_type": "pick_clean_then_place_in_recep",
"turk_annotations": {
    "anns": [
        {
            "assignment_id": "A2JBNDG0U9IA6I_3JRJSWSMQK2KRL63FZNL6EX0B4QE3T",
            "high_descs": [
                "Turn to the right and walk to the white kitchen table on your left",
                "Pick up the yellow handled knife on the table",
                "Walk to the right end of the kitchen table and face it",
                "Slice a apple on the table",
                "Walk back to the left side of the kitchen table",
                "Place the knife on top of the green lettuce head",
                "Walk to the right end of the kitchen table and face it",
                "Pick up the slice of apple on the table",
                "Turn around and walk to the left and face the kitchen sink",
                "Place the slice of apple in the sink and rinse it, then remove it",
                "Turn around and walk to the end of the kitchen and face the table on the right",
                "Place the apple slice back on the table"
            ],
            "task_desc": "Slice an apple or vegetable followed by rinsing it",
            "votes": [
                1,
                1,
                1,
                1,
```

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Exemples : pick and place with movable recep

```
"task_id": "trial_T20190908_074618_435576",
"task_type": "pick_and_place_with_movable_recep",
"turk_annotations": {
    "anns": [
        {
            "assignment_id": "AJQGWGESKQT4Y_3GM6G9ZBKQEN2QWABCHV1Z67EG4TMA",
            "high_descs": [
                "Turn around and face the stove.",
                "Pick the pot up from the stove.",
                "Turn and go to the left and then turn right to face the counter to the left of the sink.",
                "Pot the pot on the counter.",
                "Pick the apple up out of the sink.",
                "Put the apple in the pot."
            ],
            "task_desc": "Put an apple in a pot on the counter.",
            "votes": [
                1,
                1
            ]
        },
```

Exemples : pick and place simple

```
"task_id": "trial_T20190909_091451_936328",
"task_type": "pick_and_place_simple",
"turk_annotations": {
    "anns": [
        {
            "assignment_id": "A2AWDI13UN5SBU_30ZX6P7VFBMB28IAL89OL6P24ESJ27",
            "high_descs": [
                "Go forward to the wall, turn right, and head toward the table on the right.",
                "Pick up the book from the table.",
                "Turn left, go forward, and then turn right toward the armchair to the left of the couch.",
                "Put the book on top of the armchair to the left of the couch."
            ],
            "task_desc": "Put a book on top of an armchair.",
            "votes": [
                1,
                1
            ]
        },
```

Exemples : pick heat then place in recep

```
"task_id": "trial_T20190907_173251_960848",
"task_type": "pick_heat_then_place_in_recep",
"turk_annotations": {
    "anns": [
        {
            "assignment_id": "A24RGLS3BRZ60J_3137ONMDKJMLLXIRAEU5P8M9FJWGEO",
            "high_descs": [
                "Turn around and go across the room. Turn left and go back to the sink.",
                "Pick up a glass from the left side of the sink.",
                "Hold the glass and take a few steps to the left.",
                "Place the glass inside the microwave and turn it on. Take the glass out of the microwave and shut the door.",
                "Hold the glass and look up to the cabinets.",
                "Place the glass in the left cabinet and shut the door."
            ],
            "task_desc": "Heat a glass and place it in the cabinet.",
            "votes": [
                1,
                1
            ]
        },
```

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Exemples : Look at obj in light

```
"task_id": "trial_T20190907_174127_043461",
"task_type": "look_at_obj_in_light",
"turk_annotations": {
    "anns": [
        {
            "assignment_id": "A1WJU1IQ3UTRC6_32VNZTT0AALUILUC1JC4FQOP430R4C",
            "high_descs": [
                "Turn left and face the dresser.",
                "Pick up the alarm clock from the dresser.",
                "Turn left, look and then face the lamp.",
                "Turn the lamp on."
            ],
            "task_desc": "Pick up the alarm clock and turn on the lamp.",
            "votes": [
                1,
                1,
                1
            ]
        },
```