BGU Pattern-Cutting Dataset (BGU-PatCut)

Raw data:

The dataset consists a folder for each experiment:

1. PatternCuttingForcePerturbation
2. PatternCuttingMotionPerturbations

Within each experiment folder, there is a folder for each participant named with the subject ID (eight digits).

Each folder contains:

- subj_ ########_AccuracyResults.mat – a table of the Total error (TE), $E_{outside}$, and E_{inside} for each trial.
- subj_########_Segmentation.mat – a table with the timestamps of the beginning of each segment for each trial.
- subj_########_trial_i_.tif (24 files, one file for each trial) – the gauze scan of the i^{th} trial.
- subj_########_trial_i_.avi (24 files, one file for each trial) – the video recording of the i^{th} trial.
- subj_########_trial_i_.mat (24 files, one file for each trial) – a MATLAB struct with the dVRK data and the timestamps of the video:
    - MTMR, MTML, PSM1 (right tool-curved scissors) and PSM2 (left tool- large needle driver):
        - position
        - orientation
        - velocity
        - wrench
        - gripper (for MTMR, MTML)
        - jaw (for PSM1,PSM2)
    - VideoTimeStamps – a vector with the timestamps of the video frames. the i^{th} element of the vector is the timestamp of the i^{th} video frame.

Perturbations protocol:

Trials	Control group	Experimental group
1-5	no perturbations	no perturbations
6-15	no perturbations	1Hz perturbations
16-18	no perturbations	no perturbations
19-21	1Hz perturbations	1Hz perturbations
22-24	Unpredictable perturbations	Unpredictable perturbations

*For additional details, please read the publication “Augmenting Robot-Assisted Pattern Cutting with Periodic Perturbations – Can We Make Dry Lab Training More Realistic?”

Subjects:

Experiment 1 - force perturbations

Participant ID	Condition 0: Control 1: Experimental	Gender	Age	Missing trials
28061013	1	'Female'	25	20
29061018	0	'Female'	26	20
29061337	1	'Male'	25	
01071039	0	'Male'	27	
02071017	1	'Male'	23	
06071407	1	'Male'	24	
15071540	0	'Female'	27	[1,4,9,10,18,20,22]
19071017	1	'Female'	28	
19071311	0	'Male'	30	
16081118	0	'Female'	26	
16081642	1	'Female'	26	
17081026	1	'Female'	26	
17081344	0	'Female'	26	
18081021	1	'Male'	28	
18081318	0	'Male'	27	4
09091043	0	'Male'	26	
09091325	0	'Female'	24	14
09091621	1	'Male'	26	[1,22]
10091019	1	'Female'	26	
10091311	0	'Male'	26	
13091033	0	'Male'	24	1
13091336	1	'Female'	24	
13091632	0	'Female'	23	
14091031	1	'Female'	NaN	
15091405	1	'Female'	24	20
15091653	0	'Male'	27	4
16091042	0	'Female'	21	[1,9]
16091312	1	'Male'	25	
17091119	1	'Male'	26	[10,12]
17091442	0	'Male'	27	

Experiment 2 - motion perturbations

Participant ID	**Condition** 0: Control 1: Experimental	**Gender**	**Age**	**Missing trials**
07061254	1	'Male'	29	22
11060830	0	'Male'	29	17
11061250	1	'Female'	25	[5,15]
14061115	0	'Female'	23	
15061420	1	'Male'	22	
17061200	1	'Male'	26	10
17061500	0	'Male'	24	3
18061013	0	'Male'	24	24
21061437	1	'Female'	24	
29110917	1	'Female'	27	7
02120927	1	'Male'	25	24
06121320	0	'Female'	24	
09120924	1	'Female'	22	15
16120950	0	'Male'	26	8
20120941	0	'Female'	NaN	
21021346	1	'Male'	29	
22021028	0	'Male'	28	[22,23,24]
22021457	0	'Female'	27	
01030929	1	'Male'	25	[11,22,23,24]
08031031	1	'Female'	24	[1,24]
14031539	0	'Female'	25	[20,23]
12041012	0	'Female'	26	
18041607	1	'Female'	24	
25040946	0	'Male'	24	