



Intelligent Software Engineering

Replication for Project 2120773

Replication

It is worth noting that as is expected with random-element or probabilistic CPT, **results will vary**, and **exact replication** is not guaranteed. This project implements Bayesian Optimisation through Gaussian Processes, and the HRAS-derived strategies are random in nature. However, results should be *similar* to those found in the experiment. Simply follow **requirements.pdf** and **manual.pdf**, as all tuning logic has been pre-implemented to ensure this project works out the box and simply execute in terminal (and project dir):

```
python3 main/main.py
```

Testing Conservative & Aggressive IS

As discussed in the report, we test against different settings of tuning, specifically different initial sample (IS) size allocations. To replicate this, you can find the following code segment in `main.py`:

```
93     runs = 3      # how many runs to do per budget
94     budgets = [100, 500, 1000] # what budgets to iterate through
95
96     hras_standard_is = 0.4 # change this to 0.15 or 0.4 as required
97     hras_adaptive_is = 0.4 # same with this ^
98     hras_ae_is = 0.4 # same with this ^
99     hras_adaptive_gaussian_is = 0.4 # same with this ^
100
```

... and change the tuning parameters as required. Each declaration ending in “`_is`” represents the IS allocation for the respective strategy. Therefore, it is required to make sure each strategy has the *same* value (being 0.15 or 0.4, based on what you want to test) for continuity.