readme for PTC

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Step 1: Prepare data

1.1 Go to `data/` dir, select a data set: `shortest_path/` or `knapsack/` , go to one of this dir

1.2 Take knapsack problem as an example:

1.2.1 Run `knapsack_generator.py` to genetate covariates and labels

1.2.2 Run `constraint_generator.py` to generate prices and budgets as constraints

Step 2: Run predict-then-calibrate algorithms (former named: LUQ)

1.1 Run `LUQ/train_f.py` to train a prediction model

1.2 Run `LUQ/train_quantile_h.py` to train a residual prediction model and get **box uncertainty set**. Calibration and RO solving steps also included when run.

1.3 Or, run `LUQ/train_2norm_h.py` to train a residual prediction model and get **ellipsoid uncertainty set**. Calibration and RO solving steps also included when run.

Step 3: Evaluation solutions

1.1 Go to `data/knapsack/` , run `evaluate_solutions.py` .

1.2 See the result file: If in Step 2-3 we set $\alpha = 0.8$ and instance = `01/1/` , then go to `data/knapsack/01/1/test/0.8/` folder, and you can see the `result.csv` file here.