Estimation of parameter importance with fANOVA

Marcus Ritt

(For dataset: test3/acotsp1000-4500-01.)

1. Analysis of a single run

1.1. Dependent variable: raw performance

```
importanceTable(dataset,"perf")
```

Table 1: Importance for measure "perf" (single run)

variable	importance	std_dev
instance	0.624	0.147
localsearch	0.052	0.075
nnls	0.046	0.082
dlb	0.009	0.028
alpha	0.002	0.006
beta	0.002	0.003
ants	0.001	0.003
rasrank	0.001	0.002
algorithm	0.001	0.004
rho	0.001	0.001
dummy	0.000	0.001
q0	0.000	0.000
elitistants	0.000	0.000

1.2. Dependent variable: normalized performance

```
importanceTable(dataset,"norm")
```

1.3. Dependent variable: performance quantile

```
importanceTable(dataset,"quan")
```

1.4. Dependent variable: normalized ranking

```
importanceTable(dataset,"rank")
```

1.5. Dependent variable: normalized ranking with imputation

```
importanceTable(dataset,"irank")
```

Table 2: Importance for measure "norm" (single run)

variable	importance	std_dev
localsearch	0.368	0.336
nnls	0.272	0.329
instance	0.127	0.101
beta	0.008	0.009
elitistants	0.003	0.003
rasrank	0.002	0.003
alpha	0.002	0.003
ants	0.002	0.003
algorithm	0.001	0.003
rho	0.001	0.002
dummy	0.000	0.000
q0	0.000	0.000
dlb	0.000	0.000

Table 3: Importance for measure "quan" (single run)

variable	importance	std_dev
localsearch	0.384	0.145
nnls	0.040	0.078
dlb	0.037	0.065
elitistants	0.026	0.017
instance	0.014	0.007
alpha	0.013	0.012
beta	0.002	0.002
rasrank	0.002	0.002
q0	0.002	0.003
ants	0.001	0.002
rho	0.001	0.001
algorithm	0.000	0.000
dummy	0.000	0.000

1.6. Dependent variable: ranking quartile with imputation

```
importanceTable(dataset,"qrank")
```

2. Comparison of measures among a single run

```
bumpChartMeasures(dataset,do.rank=use.ranks)
```

Table 4: Importance for measure "rank" (single run)

variable	importance	std_dev
instance	0.461	0.057
localsearch	0.137	0.068
dlb	0.049	0.061
nnls	0.041	0.090
elitistants	0.013	0.011
alpha	0.007	0.011
ants	0.005	0.008
beta	0.003	0.004
rasrank	0.003	0.002
rho	0.001	0.002
algorithm	0.000	0.000
q0	0.000	0.001
dummy	0.000	0.000

Table 5: Importance for measure "irank" (single run)

variable	importance	std_dev
localsearch	0.063	0.019
instance	0.051	0.014
rasrank	0.010	0.014
nnls	0.006	0.006
alpha	0.004	0.003
beta	0.003	0.003
ants	0.002	0.001
dlb	0.002	0.003
rho	0.002	0.003
elitistants	0.001	0.002
algorithm	0.001	0.001
dummy	0.001	0.001
q0	0.000	0.001

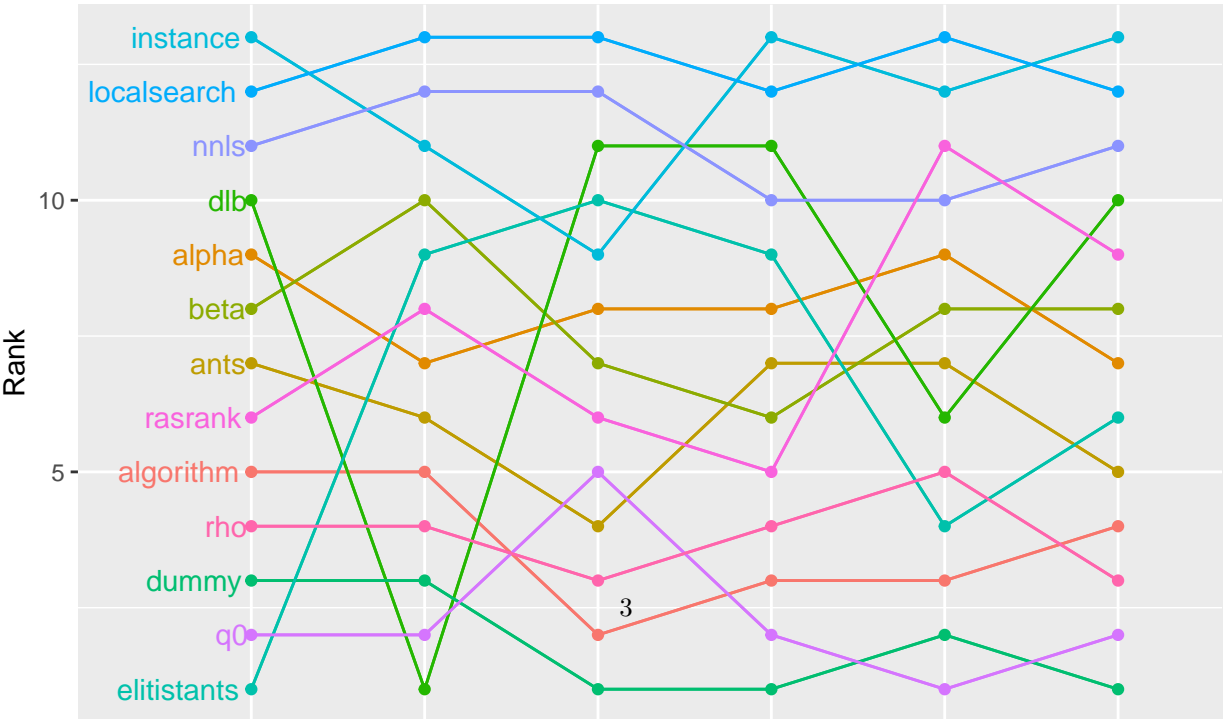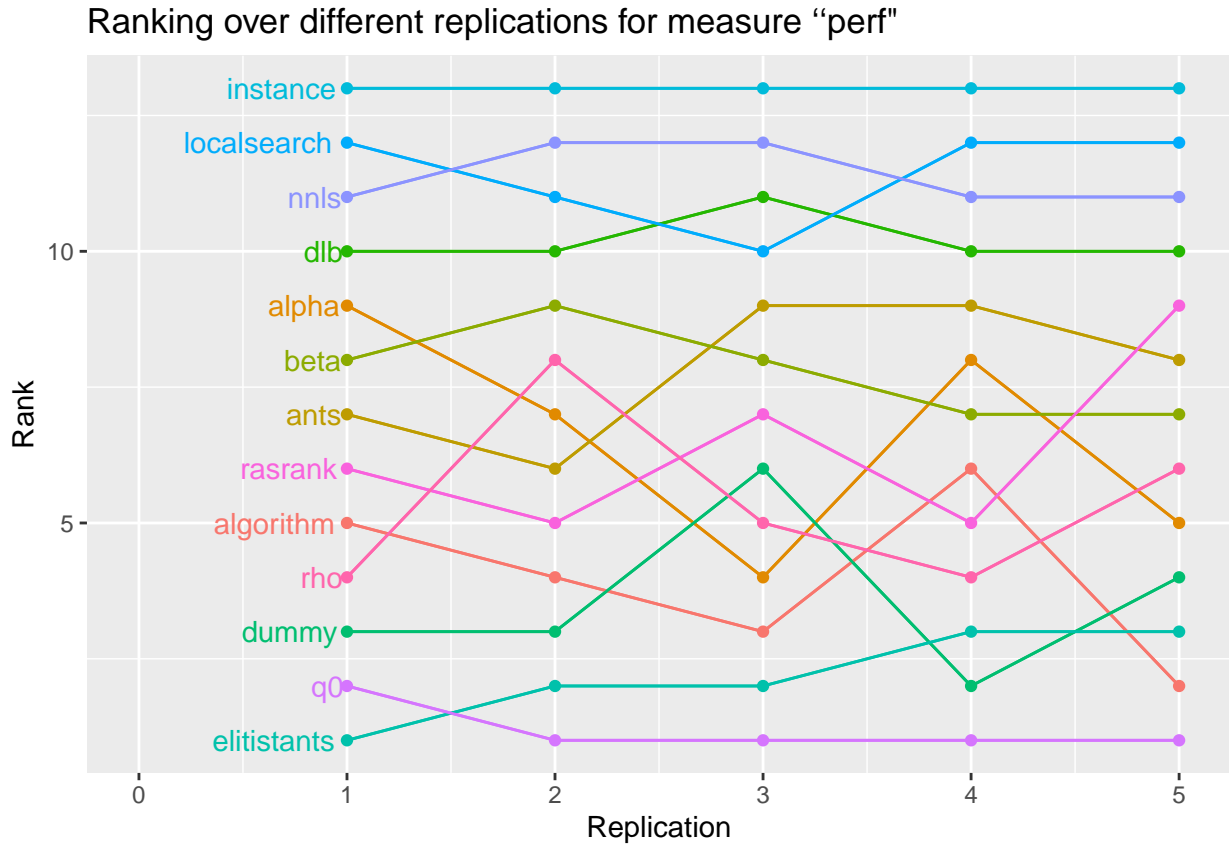

Ranking under different measures

3

Table 6: Importance for measure "qrank" (single run)

variable	importance	std_dev
instance	0.768	0.034
localsearch	0.007	0.004
nnls	0.001	0.001
dlb	0.001	0.001
rasrank	0.001	0.000
beta	0.000	0.000
alpha	0.000	0.000
elitistants	0.000	0.001
ants	0.000	0.000
algorithm	0.000	0.000
rho	0.000	0.000
q0	0.000	0.000
dummy	0.000	0.000

3. Comparison of five replications

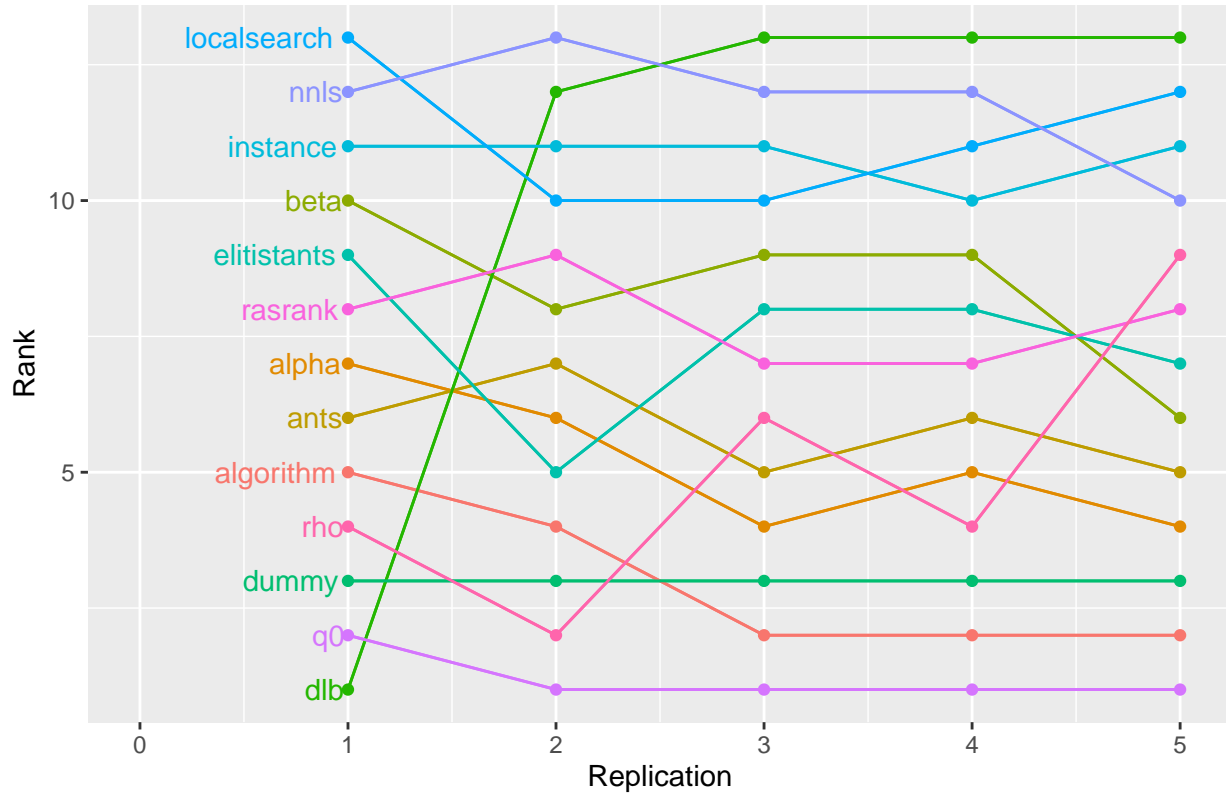### 3.1. Dependent variable: raw performance

```
bumpChartReplications(dataset,"perf",do.rank=use.ranks)
```

Ranking over different replications for measure "perf"

3.2. Dependent variable: normalized performance

```
bumpChartReplications(dataset,"norm",do.rank=use.ranks)
```
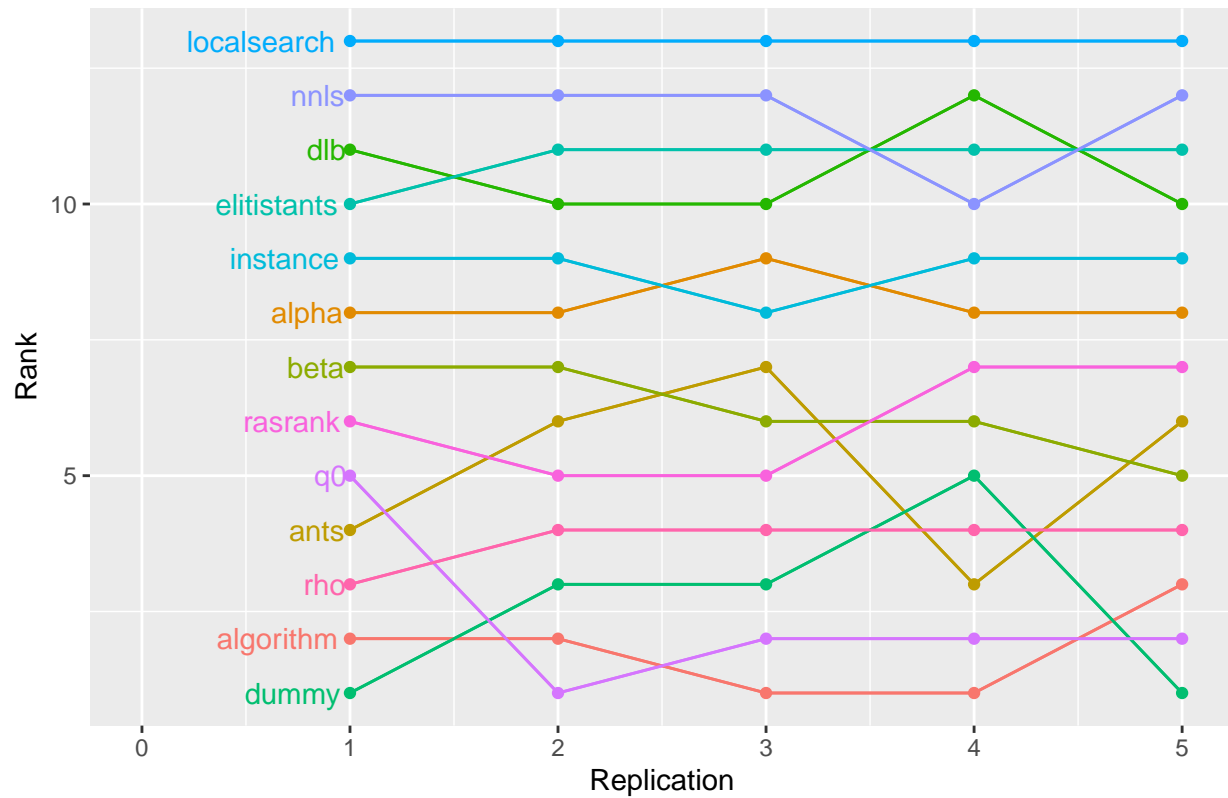

Ranking over different replications for measure "norm"

3.3. Dependent variable: performance quantile

```
bumpChartReplications(dataset,"quan",do.rank=use.ranks)
```
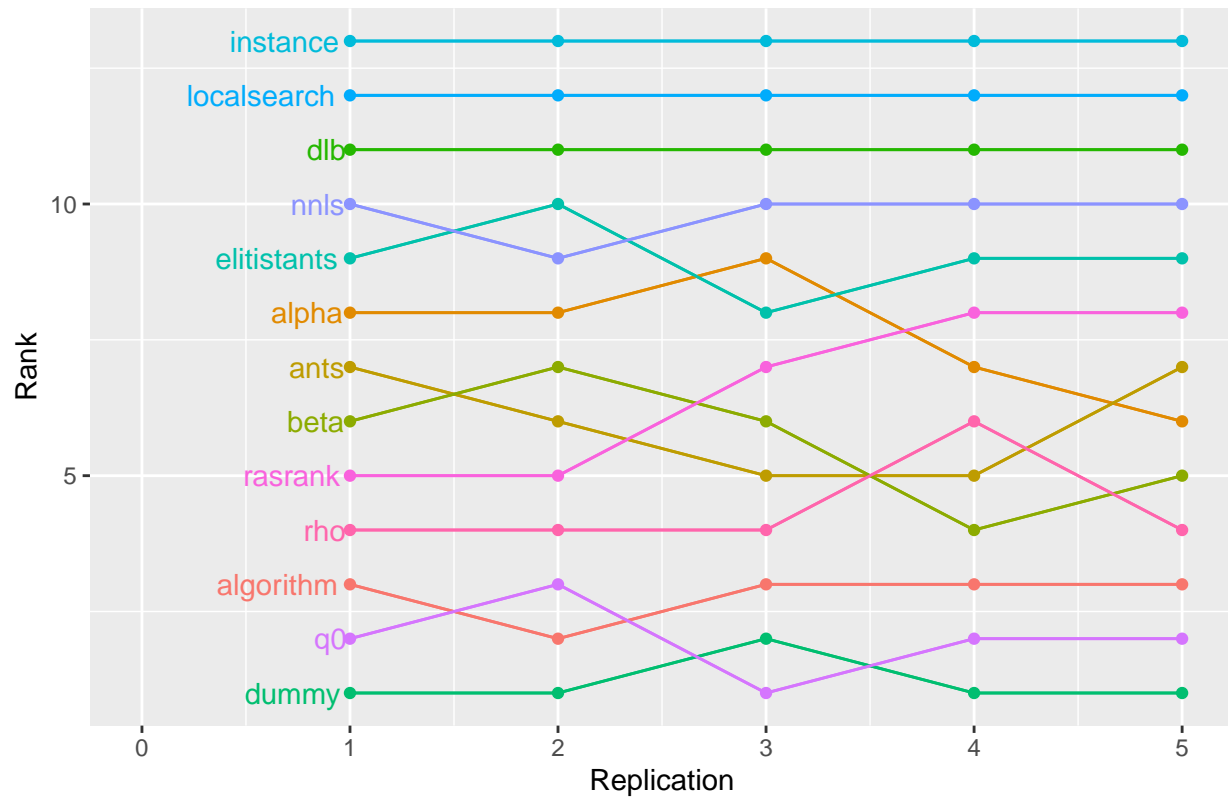
Ranking over different replications for measure "quan"

3.4. Dependent variable: normalized ranking

```
bumpChartReplications(dataset,"rank",do.rank=use.ranks)
```
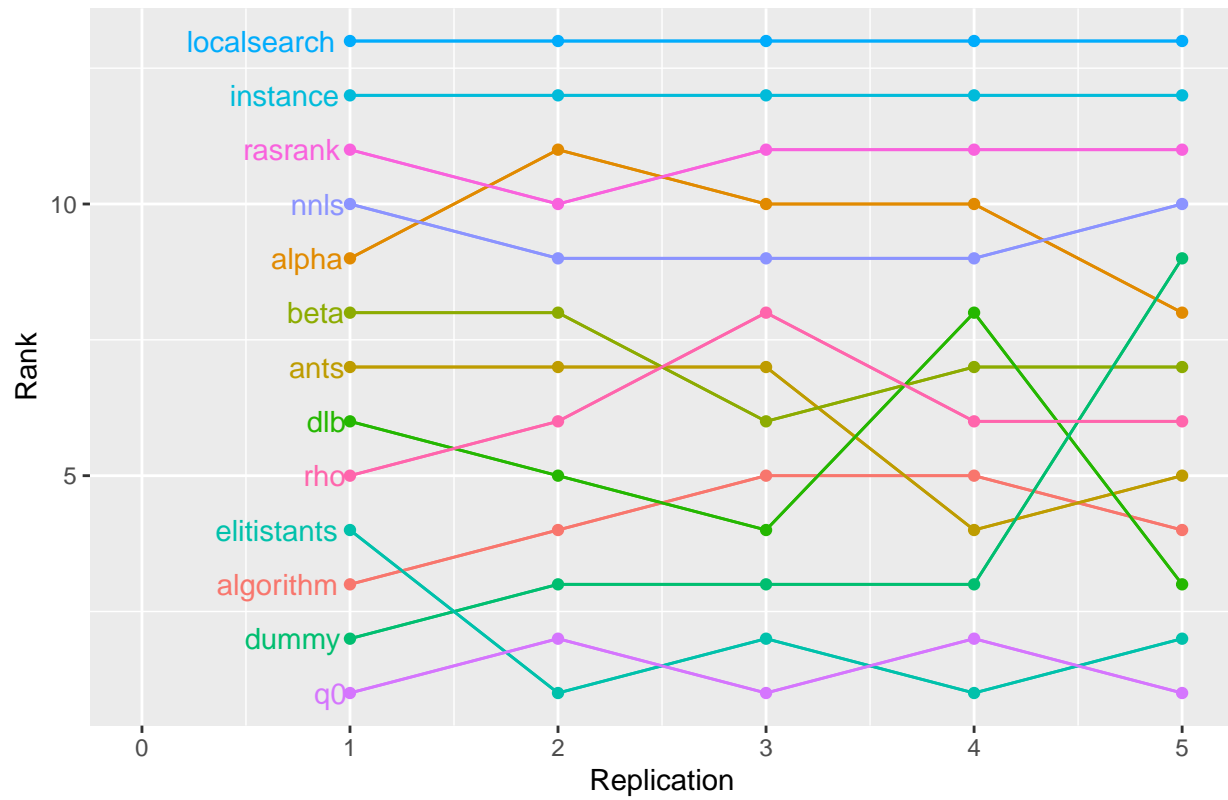
Ranking over different replications for measure "rank"

3.5. Dependent variable: normalized ranking with imputation

```
bumpChartReplications(dataset,"irank",do.rank=use.ranks)
```

Ranking over different replications for measure "irank"

3.6. Dependent variable: ranking quartile with imputation

```
bumpChartReplications(dataset,"qrank",do.rank=use.ranks)
```

Ranking over different replications for measure ''qrank''