# FooBar

## Jan de Leeuw - University of California Los Angeles

## Started December 12 2022, Version of October 16, 2023

#### **Abstract**

TBD

## **Contents**

| 1  | weights            | 2 |
|----|--------------------|---|
| 2  | normalized weights | 2 |
| 3  | delta              | 2 |
| 4  | normalized delta   | 2 |
| 5  | ${f v}$            | 2 |
| 6  | vinv               | 3 |
| 7  | xold               | 3 |
| 8  | cross              | 3 |
| 9  | xold from eigen    | 3 |
| 10 | dold               | 3 |
| 11 | scaled xold        | 4 |
| 12 | scaled dold        | 4 |
| 13 | sold               | 4 |
| 14 | guttman transform  | 4 |

## 1 weights

```
[,1]
##
                   [,2]
                               [,3]
                                           [,4]
## [1,]
        +0.000000
                    +1.000000
                                +2.000000
                                           +3.000000
## [2,]
        +1.000000
                    +0.000000
                                +4.000000
                                           +5.000000
## [3,]
         +2.000000
                    +4.000000
                                +0.000000
                                           +6.000000
## [4,]
        +3.000000
                    +5.000000
                                +6.000000
                                           +0.000000
```

### 2 normalized weights

```
[,1]
##
                    [,2]
                               [,3]
                                           [,4]
## [1,]
        +0.000000
                    +0.047619
                                +0.095238
                                           +0.142857
## [2,]
        +0.047619
                    +0.000000
                                +0.190476
                                           +0.238095
## [3,]
        +0.095238
                    +0.190476
                                +0.000000
                                           +0.285714
## [4,]
                    +0.238095
         +0.142857
                                +0.285714
                                           +0.000000
```

## 3 delta

```
[,1]
##
                    [,2]
                               [,3]
                                           [,4]
        +0.000000
                    +1.000000
## [1,]
                                +2.000000
                                            +3.000000
## [2,]
        +1.000000
                    +0.000000
                                +4.000000
                                            +5.000000
## [3,]
                                +0.000000
         +2.000000
                    +4.000000
                                            +6.000000
## [4,]
         +3.000000
                    +5.000000
                                +6.000000
                                            +0.000000
```

## 4 normalized delta

```
[,2]
        [,1]
                               [,3]
                                          [,4]
## [1,]
        +0.000000 +0.218218
                               +0.436436
                                           +0.654654
## [2,]
         +0.218218
                    +0.000000
                               +0.872872
                                           +1.091089
## [3,]
        +0.436436
                    +0.872872
                               +0.000000
                                           +1.309307
## [4,]
         +0.654654
                    +1.091089
                               +1.309307
                                           +0.000000
```

#### 5 v

```
##
        [,1]
                   [,2]
                               [,3]
                                          [,4]
## [1,]
         +0.285714 -0.047619
                               -0.095238
                                          -0.142857
## [2,]
         -0.047619
                    +0.476190
                               -0.190476
                                          -0.238095
## [3,]
         -0.095238
                    -0.190476
                                +0.571429
                                           -0.285714
        -0.142857
## [4,]
                    -0.238095
                               -0.285714
                                          +0.666667
```

#### 6 vinv

```
## [,1] [,2] [,3] [,4]

## [1,] +2.008880 -0.842738 -0.644447 -0.521695

## [2,] -0.842738 +1.291254 -0.247864 -0.200652

## [3,] -0.644447 -0.247864 +1.045751 -0.153440

## [4,] -0.521695 -0.200652 -0.153440 +0.875787
```

#### 7 xold

```
## [,1] [,2]

## [1,] +1.000000 +4.000000

## [2,] +2.000000 +3.000000

## [3,] +3.000000 +2.000000

## [4,] +4.000000 +1.000000
```

#### 8 cross

```
## [,1] [,2] [,3] [,4]

## [1,] -0.104167 +0.038690 +0.050595 +0.014881

## [2,] +0.038690 +0.229167 -0.068452 -0.199405

## [3,] +0.050595 -0.068452 +0.395833 -0.377976

## [4,] +0.014881 -0.199405 -0.377976 +0.562500
```

## 9 xold from eigen

```
## [,1] [,2]

## [1,] -0.023575 +0.001340

## [2,] -0.169582 -0.460776

## [3,] -0.551259 +0.324247

## [4,] +0.744416 +0.135188
```

#### 10 dold

## 11 scaled xold

```
## [,1] [,2]

## [1,] -0.022884 +0.001301

## [2,] -0.164615 -0.447279

## [3,] -0.535112 +0.314749

## [4,] +0.722611 +0.131228
```

#### 12 scaled dold

```
## 1 2 3 4

## 1 +0.000000 +0.470437 +0.600522 +0.756732

## 2 +0.470437 +0.000000 +0.847322 +1.059169

## 3 +0.600522 +0.847322 +0.000000 +1.271041

## 4 +0.756732 +1.059169 +1.271041 +0.000000
```

## 13 sold

## [1] +0.003934

## 14 guttman transform

```
## [,1] [,2]

## [1,] -0.029266 -0.001372

## [2,] -0.163900 -0.442303

## [3,] -0.533326 +0.312222

## [4,] +0.726492 +0.131453
```