Variable Pricing
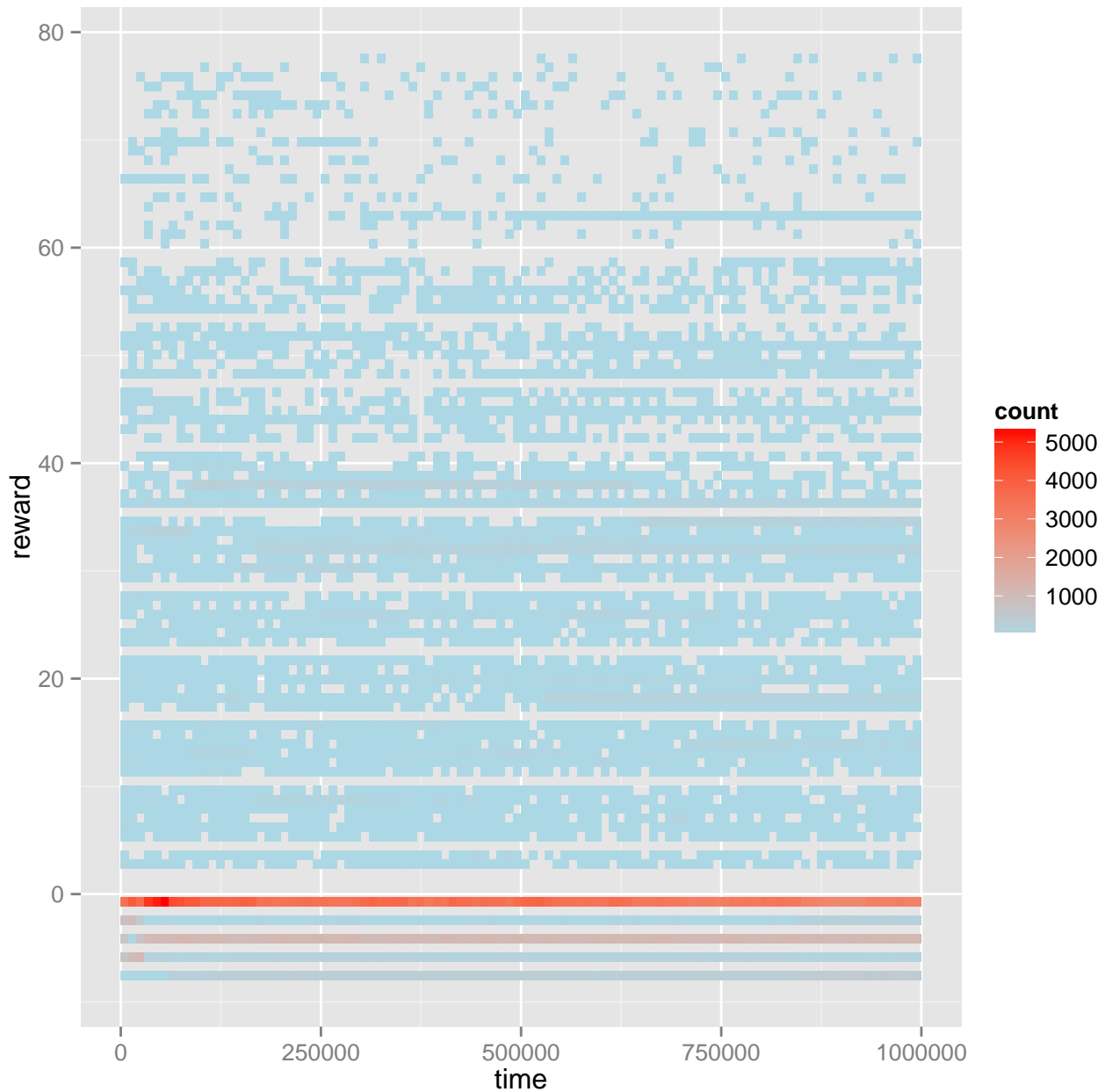
```
      time              action              reward            busy_for
 Min.   :     1    wait : 15946    Min.   :-8.0     Min.    :1.0
 1st Qu.:250001    drive:215554    1st Qu.:-4.0     1st Qu.:1.0
 Median :500000    offer:417090    Median :-1.0     Median :1.0
 Mean   :500000    NA's :351409    Mean   : 3.4     Mean    :1.5
 3rd Qu.:750000                    3rd Qu.:-1.0     3rd Qu.:2.0
 Max.   :999999                    Max.   :78.0     Max.    :4.0
                                   NA's   :351409   NA's    :351409
 location        destination       passenger             fare
 2   : 68003     2   : 54164    declined:172168    Min.    :  5
 1   : 62951     1   : 48096    accepted:118691    1st Qu.: 36
 3   :217313     3   : 28987    NA's    :709140    Median : 44
 4   :166313     5   : 56643                       Mean    : 76
 5   : 37470     6   : 52413                       3rd Qu.: 96
 6   : 96540     4   : 50556                       Max.    :400
 NA's:351409     NA's:709140                       NA's    :709140
```

Observed rewards over time

```
Analysis of Variance Table

Response: reward
             Df     Sum Sq Mean Sq F value      Pr(>F)
time          1      66034   66034  372.86 < 2.2e-16 ***
Residuals 648588 114867512     177
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' '
```
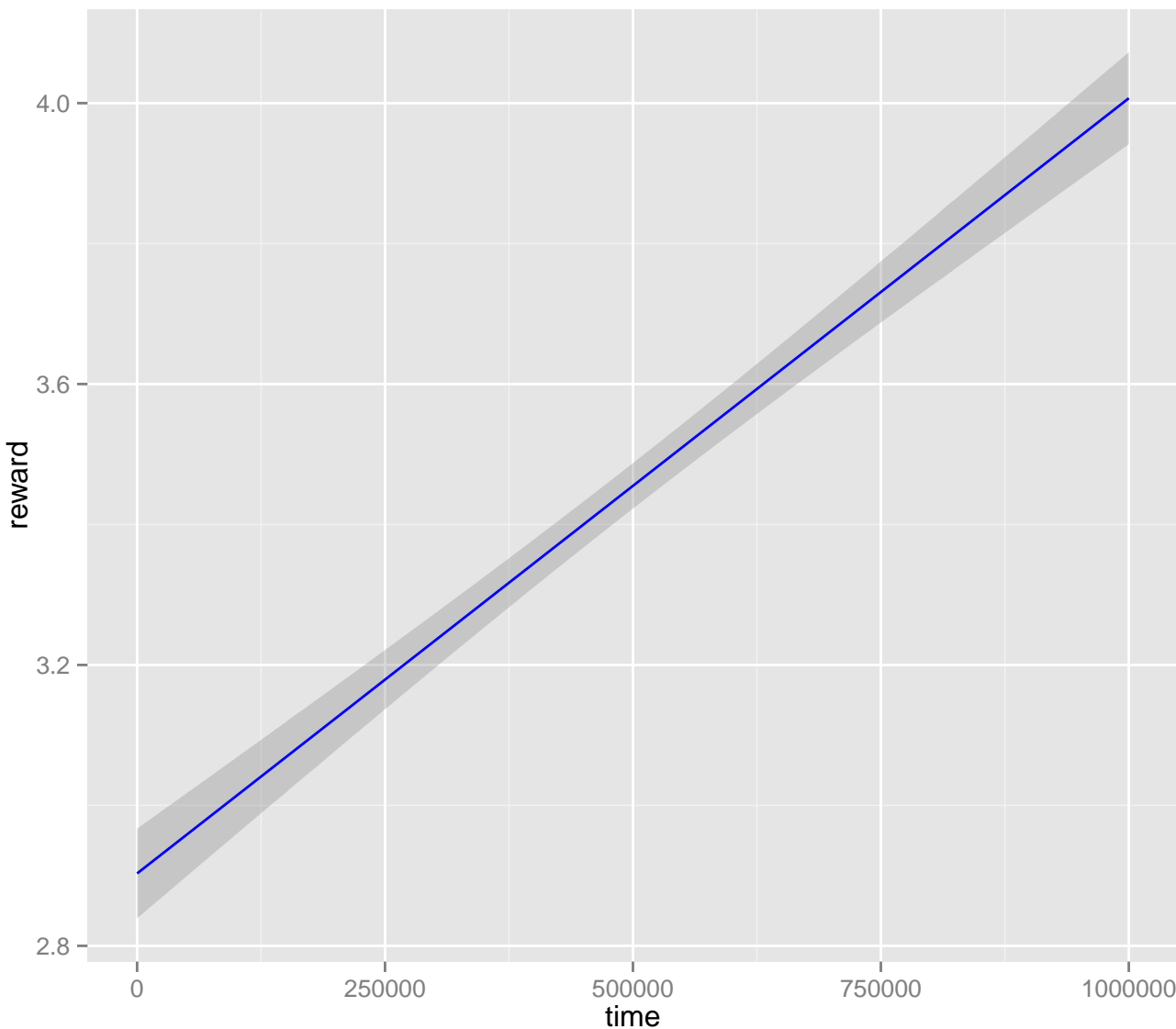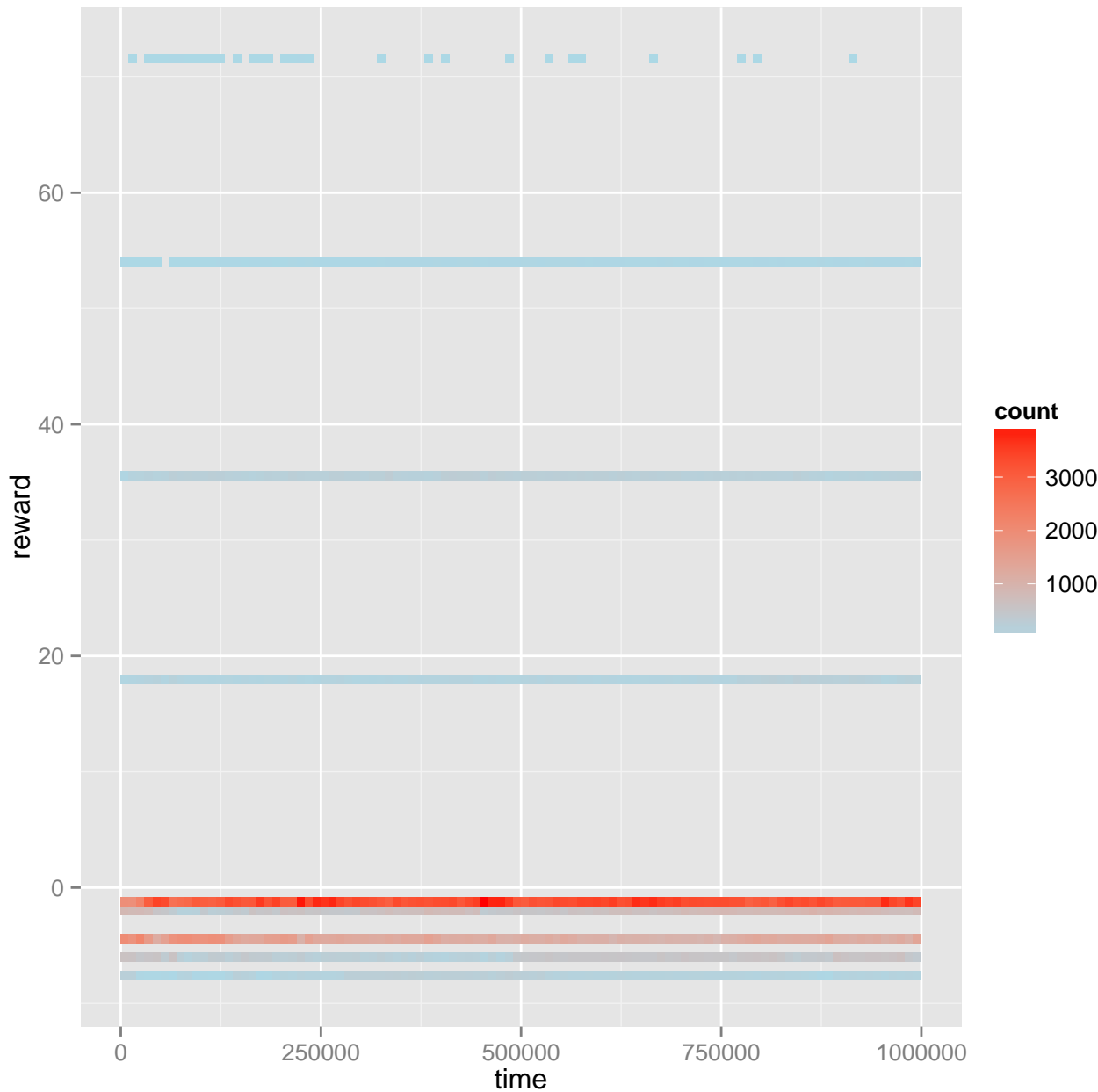
Benchmark

```
      time                action               reward              busy_for
 Min.    :      1    wait :137336    Min.    :-8.0      Min.    :1.0
 1st Qu.: 250001    drive:395392    1st Qu.:-4.0      1st Qu.:1.0
 Median : 500001    offer: 84247    Median :-1.0      Median :1.0
 Mean   : 500001    NA's :383025    Mean    :-0.2      Mean    :1.6
 3rd Qu.: 750000                    3rd Qu.:-1.0      3rd Qu.:2.0
 Max.   :1000000                    Max.    :72.0      Max.    :4.0
                                    NA's    :383025    NA's    :383025

 location          destination         passenger              fare
 6   :125195    1   :  8962    accepted: 39118    Min.    :20.0
 1   : 70521    2   :  9799    declined: 15125    1st Qu.:20.0
 2   :120027    4   :  9136    NA's     :945757    Median :40.0
 4   :117117    5   : 10564                        Mean    :38.9
 5   : 56038    6   :  9469                        3rd Qu.:40.0
 3   :128077    3   :  6313                        Max.    :80.0
 NA's:383025    NA's:945757                        NA's    :945757
```

Observed rewards over time

```
Analysis of Variance Table

Response: reward
            Df    Sum Sq Mean Sq F value      Pr(>F)
time         1     10242 10241.8   136.3 < 2.2e-16 ***
Residuals 616973 46361124    75.1
---
Signif. codes:  0 `***' 0.001 `**' 0.01 `*' 0.05 `.' 0.1 ` '
```

Regression analysis of observed rewards over time

Linear Regression (95% confidence)