Input Maze, Colors, and Robot Location:

```
##.#
##.#
##.#
##.#

\colors r r r r r r r r r r r r r r r
\robot 2 0
```

Results from Filtering with num_iter = 3:

```
robot location [2, 0]
[0.0, 0.0, 0.055, 0.0, ]
[0.0, 0.0, 0.055, 0.0, ]
[0.0, 0.0, 0.055, 0.0, ]
[0.0, 0.0, 0.055, 0.0, ]


##A#
##.#
##.#
##.#

robot moving north
robot location [2, 0]
[0.0, 0.0, 0.0242, 0.0, ]
[0.0, 0.0, 0.0242, 0.0, ]
[0.0, 0.0, 0.0242, 0.0, ]
[0.0, 0.0, 0.0242, 0.0, ]


##A#
##.#
##.#
##.#

robot moving south
robot location [2, 1]
[0.0, 0.0, 0.010648, 0.0, ]
[0.0, 0.0, 0.010648, 0.0, ]
[0.0, 0.0, 0.010648, 0.0, ]
[0.0, 0.0, 0.010648, 0.0, ]


##.#
##A#
##.#
##.#

[0.0, 0.0, 0.25, 0.0, ]
[0.0, 0.0, 0.25, 0.0, ]
[0.0, 0.0, 0.25, 0.0, ]
[0.0, 0.0, 0.25, 0.0, ]
```

Results from Viterbi Algorithm:

```
['r', 'r', 'r']
3
Viterbi algorithm found path: [(2, 1), (2, 2), (2, 3)]
##.#
##A#
##.#
##.#

##.#
##.#
##A#
##.#

##.#
##.#
##.#
##A#
```