**NATIONAL UNIVERSITY OF SAN MARCOS**

**University of Peru, Dean of America**

**FACULTY OF SYSTEMS ENGINEERING AND COMPUTER SCIENCE**

**PROFESSIONAL SCHOOL OF SYSTEMS ENGINEERING**

****

**COURSE:**

Artificial intelligence

**THEME:**

Week 3 Report

**TEACHER:**

Vega Huerta, Hugo Froilán

**MEMBERS:**

* Cáceres Díaz, Renzo (11200004)
* Escobar Villa, Andrés (6200075)
* Gonzales Aburto, Ricardo (18200061)
* Huamaní Avendaño, Dulce (18200219)
* Molina Yupanqui, Flor (18200164)
* Palomino Loa, Junior (18200172)
* Quispe Vega, Anthony (18200179)
* Vera León, Bryan (18200124)

**LIMA – PERU**

**2021**

**Space of States**

Arepresentation of state spaces is a mathematical model of a physical system described by a set of inputs, outputs, and state variables related by first-order differential equations that combine into a first-order matrix differential equation.

**Example: State Vacuum Cleaner Space**

Diagram

Description automatically generated

**States:** Complete dirt and robot locations

**Actions:** Left, Right, Aspire, NoOp

**Goal test:** No dirt

**Cost of the road:** 1 per action

**Problem of the person, fox, chicken and corn**

1. Pass the person and the hen to the right side
2. Move the person to the left side
3. Pass the person and the fox to the right side
4. Move the person and the hen to the left side
5. Pass the person and corn to the right side
6. Move the person to the left side
7. Pass the person and the hen to the right side

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | P | Z | M | G |
| 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 1 |
| 3 | 1 | 1 | 0 | 1 |
| 4 | 0 | 1 | 0 | 0 |
| 5 | 1 | 1 | 1 | 0 |
| 6 | 0 | 1 | 1 | 0 |
| 7 | 1 | 1 | 1 | 1 |

**Avar Search**

Radar chart

Description automatically generated

Bucarest

H=0

Sibiu

H=253

Riminicu

H=193

Oradea

H=380

Fagaras

H=178

Arad

H=366

Timisoara

H=329

Zerid

H=374

Sibiu

H=253

Arad

H=366