

AUTOMATION & COMPUTER HALLUCINATION IN COLLECTIVE BEHAVIOUR OF TRANSPORTATION SECURITY

Ms.Pooja Ambatkar¹, Mr.Shailesh Siset²

¹P.G.Student, ²P.G.Student, ²Department of ENTC, AVBIT, Pawnar, Wardha
¹poojaambatkar@gmail.com, ²shaileshsisat@gmail.com

ABSTRACT

An automotive controller that complements the driving experience must work to avoid collisions, enforce a suave trajectory, and deliver the vehicle to the intended destination as quickly as possible. Unfortunately, satisfying these chunks with traditional methods proves intractable at best and forces us to consider biologically - inspired techniques like Collective Brainpower. A organizer is currently being designed in a robot simulation program with the goal of implementing the system in real hardware to investigate these biologically inspired techniques and to validate the results. In this paper we present an idea that can be implemented in traffic safety by the application of Robotics & Computer Vision through Collective Intelligence.

Key-words : Trajectory, Simulation, Controller,

INTRODUCTION

For the last four centuries, improvements in science have fuelled industrial society. In the twentieth century, mechanization found perhaps its greatest expression in Henry Ford's assembly line. Mass invention touches almost every facet of current life. Our sustenance is readymade in meat plants, profitable bakeries, and canaries. Our sartorial is transported by the ton from factories in China and Taiwan. Positively all the conveniences of our lives - our stereos, TVs, and microwave ovens - roll off assembly lines by the truckload. Today, we're presented with another solution that hopefully will fare better than its antecedents. It goes by the name of industrialism, and is normally connected with our computer technology.

WHAT IS A ROBOT?



Robotic Assembly

Robot has two attributes:

A "brain," which could be anything from a erudite computer down to a nascent control program. Movement (either the computer itself moves, or it controls an arm or other transportable part).

There is no standardized definition.

A robot partakes three indispensable individualities:

- It has some form of movement
- It can be automated to complete a variety of jobs
- After being programmed, it works robotically

A computer is not a robot because it deficiencies agility. Special-purpose mechanisms are not robots because they mechanise individual a rare responsibilities. Remote control devices work only with human involvement and therefore are not robots. The International Federation of Robotics (IFR) and the Australian Robot Association follow this ISO standard when compiling robot information. Mechanisms functioning in a manufacturing environment that have only one or two programmable axes of motion therefore are not incorporated in these measurements.

Although the huge majority of robots today are used in workshops, advances in expertise are enabling robots to systematize many tasks in non-manufacturing industries such as agricultural science, structure, health care, retailing and additional amenities. Australia's furthestmost famed robotics research project was concerned to develop a robot skilled of trimming sheep. Technologies that are being developed to encompass robot capabilities include machine apparition and other instruments, vehicles that can travel automatically on a diversity of, and mechanisms able to manipulate supple materials without destructive them. It is estimated that robots will be utilized in the 21st century not only in industry but also at home. Potential internal applications include supporting elderly or busy people to carry out tasks such as cleaning or cooking.

The ISO has not yet produced a surfaces homogenous definition of a automaton used in non-manufacturing applications. According to the IFR such a robot is 'a machine which can be involuntary to perform tasks which involve manipulative and in some cases locomotive actions under involuntary control'. Machines primarily have been installed in factory environments where the tasks to be done can be indeed controlled. However, it is impossible to program a robot so that it always acts correctly in an environment that is poorly tacit or loosely structured. Occasional human intercession will be required to provide high-level guidance to robots working in such Surroundings. The proposal of proper human/robot interfaces is expected to become an important priority.

SURVEY

Sustaining all of these situations would be a tall order for outmoded mechanism procedures. As a outcome, we aspect for inspiration from biological systems. The principal advantage of a organically inspired slant is that such techniques have raised the test of eons of antagonism and evolution. Not only are these practices robust, they also have the advantage of scalable and disseminated operation, as well as acceptance of existing assorted agents. A specific biologically stimulated approach that seems well optimized for understanding collective singularities is

Collective Intelligence. Horde Acumen provides a framework in which autonomy, emergence, and disseminated robustness replace centralized control. This is analogous to associating birds flocks to a complex man-made air-traffic control system that results in countless flight delays and lost luggage.

NEED:

The main aim is to work toward developing a automotive organizer that progresses upon the driving experience. The manager will monitor certain road situations and will prevail the humanoid motorist .

When overriding, it should have three critical priorities:

1: Diminish inclination and sternness of collisions. No controller system is flawless. It is unbearable to promise the abolition of automobile smashes. Vehicles are complex automatic and automated systems.

2: Impose a suave drive. A control system, which causes an automobile to confrontationally interlace through circulation, should be considered low-grade to a system, which sends the car along a smoother, more expectable path. An prickly and impulsive ride is spiteful for the travellers and may be hazardous for other drivers on the road.

3: Take from point A to point B as rapidly and competently as possibly. The ultimate aim of any automatic vehicular controller is to distribute the passenger to projected endpoint. If this proves to be then the system should give the passenger the possibility to terminate the trip or transport the passenger to a point as close as possible to the innovative planned endpoint.

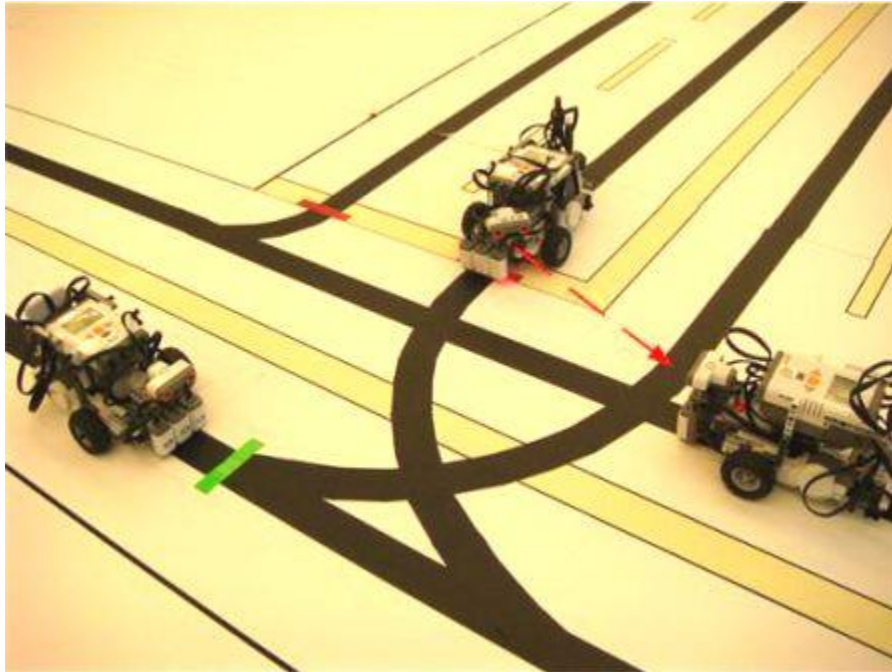


Scenario of Streets

IMPRESSION

Sample traffic circumstances will be simulated in the WEBOTS .The simulated automobiles are measured by a subsumption planning. A simplified model of a human driver will just try to avoid other cars and follow the

lanes. If for at all reason, the pretend human driver causes the car to enter any uninvited situation, the driver will first be warned. Only when the situation becomes ominous and requires immediate oblique action, will the complementing organiser predominate the motorist. In all other cases, the guidelines given by the driver are passed directly to the actuators.



Traffic Scenario With Robots.

The accompanying controller will have access to data from on-board complication sensors and lane radars in order to have an alertness of the state of the environment. The radars on the Road that uses Radio signals will provide the necessary traffic statistics. Evolutionary techniques will be used to suggest optimal placements and configurations for the sensors on the vehicle as well as other organiser parameters. Using the GPS (Globe Positioning Satellite) System the on-board computer systems gives absolute location of the vehicle. The initial replications will take place on a conservative three-lane highway but curved streets may be added later. Currently, the Webots simulator does not pretend the holonomicity of actual vehicles. Precisely, Web-bots was intended to simulate small corpulent robots with two wheels on either side. This benevolences a problem in regards to how a real traffic situation should be scaled so that a simulation can be accurate. An looming software reconsideration of the simulator should determination the question. The Web-bots emulator is also not optimized for very large macroscopic simulations For extremely large replications, cellular automata-based platforms may eventually have to be made. Atlast, applying this organisation in real robots would provide material confirmation or contradiction of any suppositions obtained during replication.

REFERENCE :

Collective Intelligence: From Natural to Artificial Systems. Bonabeau, E.

Dorigo, M., Theraulaz, G. New York: Oxford University Press, 1999.

Journal of Robotics and Automation, 1996.

Robot Herds: Group Behaviours for Systems with Significant Dynamics.

Proceedings of Artificial Life IV, 1994. Reynolds, C.

Personal Robotics by Brent Baccala.

<http://www.robot-automation.com/robot-automation-system>