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INTELLIGENT ROBOT SOFTWARE RESEARCH ISSUES FOR MODERN BANKING MANAGEMENT

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ABSTRACT

In this technological advanced era of computers, Banking with various facilities available for customers of the world. The requirements to be satisfied for customers includes fastest & accurate processing of transactions.Due to heavy busy schedule banking faces problems to provide modern facility tasks which are beyond expectations to be handled by humans. Branch of computer science and engineering is continuously updating robot. This paper focus on computer controlled robot banking research issues for finance management.

Keywords: Artificial Intelligence, Robotics, Cognition , Mobile Computing, Robustness, Internet Security

I. INTRODUCTION

A bank is a financial institution licensed to receive deposits and make loans. Banks may also provide financial services, such as wealth management, currency exchange and safe deposit boxes.

A business, also known as an enterprise, or a firm, is an organizational entity involved in the provision of goods and services to consumers. [1]

Artificial intelligence is the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. Artificial intelligence areas of specialization are:

- Expert systems
- Natural language programming
- Game playing
- Neural networks
- Robotics

Robot is a machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer.

II. LITERATURE REVIEW

Artificial intelligence is the branch of computer science concerned with making computers behave like humans. The term was coined in 1956 by John McCarthy at the Massachusetts Institute of Technology. The first industrial robot was introduced to the U.S. in the 1960s. Since then, their technology has improved immensely.

By allowing robots to collaborate and share information , each robot will essentially offload its "brain" into the cloud. Moreover, each unit can be considerably "lighter" in terms of its processing and software requirements; when in doubt, it just needs to hit the cloud. Ultimately, this will make robots cheaper, more efficient — and more intelligent.

The platform will allow robots who are connected to the Internet to directly access powerful computational, storage, and communications technologies, including those of modern data centers.

The Robotics Toolbox is a software package that allows a MATLAB user to readily create and manipulate datatypes fundamental to robotics such as homogeneous transformations, quaternions and trajectories (10)

Being able to detect and recognize human activities is essential for several applications, including personal assistive robotics (11) In robotics, an essential component of robot motion planning and collision avoidance is a geo- metric reasoning system which can detect potential contacts and determine the exact collision points between the robot manipulator and the obstacles in the workspace. Although it doesn't provide a complete solution to the path planning and obstacle avoidance problems, it often serves as a good indicator to steer the robot away from its surrounding obstacles before an actual collision occurs.(12) Robots — machines that can perform complex tasks automatically — have fascinated humans ever since they first conceived them. Since robots were imagined long before they were created, many of the best-known robots available in complex areas.

The world's most advanced humanoid robot, ASIMO (Advanced Step in Innovative Mobility) "is the culmination of two decades of humanoid robotics research by Honda engineers," Japan's biggest bank to introduce multilingual robot workers in its Tokyo branches. First it was robots making ice cream, then you had robots selling coffee machines, now developers in Japan have created a robot that can advise customers on their finances. Japan's largest bank, Mitsubishi UFJ Financial Group, has unveiled an all-talking and all-walking robot employee that is set to be introduced into their Tokyo branches in 2015. HDFC's latest salvo at robotics is clearly inspired from Japanese banks, which had introduced robots last year. ICICI Bank introduces 'Software Robotics' to power banking operations, September 08, 2016(10) Over 200 software robots are performing over 10 lakh banking transactions every working day Pares response time to customers by up to 60%; sharply raises productivity Mumbai: ICICI Bank, India's largest private sector bank, announced the deployment of 'Software Robotics' in over 200 business processes across various functions of the bank. The bank is the first in the country and among few, globally, to deploy 'Software Robotics' that emulates human actions to automate and perform repetitive, high volume and time consuming business tasks cutting across multiple applications.

At ICICI Bank, software robots have reduced the response time to customers by up to 60% and increased accuracy to 100% thereby sharply improving the bank's productivity and efficiency. It has also enabled the

bank's employees to focus more on value-added and customer-related functions. The software robots now perform over 10 lakh banking transactions every working day.

ICICI Bank has deployed these software robots in over 200 business process functions across the organisation including retail banking operations, agri-business, trade & forex, treasury and human resources management among others. The bank has implemented the 'Software Robotics' platform mostly in-house, leveraging recent advancements in artificial intelligence such as facial and voice recognition, natural language processing, machine learning and bots among others.

Announcing the deployment of 'Software Robotics', Ms. Chanda Kochhar, MD & CEO, ICICI Bank, said, "ICICI Bank has a legacy of pioneering innovations in technology to create propositions that provide increased convenience to customers. We have created new paradigms in the financial services industry by taking the lead in introducing pathbreaking innovations including internet banking, mobile banking, Tab banking, Touch Banking branches and banking on social media.

It is yet another proud moment for us as we bring forth the futuristic technology of 'Software Robotics'. We have re-engineered over 200 business processes which are powered by software robots across various functions of the Bank. This initiative marks a milestone in the banking innovation in the Indian banking industry as it joins a select group of overseas organisations which have deployed this unique state-of-the-art robotic technology in such a large way.

The software robots are processing over 10 lakh transactions daily, bringing in unparalleled operational efficiency, higher accuracy and a massive reduction in processing time for customer services. Further, with our retail banking growing at over 25% every year, we will be ready to handle larger volumes with the same resources. This initiative deeply embodies the bank's philosophy of 'khayaal aapka', wherein we strive to offer the best-in-class experience to our customers.(13)

III. MERITS

- Going to far away planets
- Spying on people in ways people can't move and from views humans can't reach
- Going far down into the unknown waters where humans would be crushed
- Giving us information that humans can't get
- Working at places 24/7 without any salary and food. Plus they don't get bored
- They can perform tasks faster than humans and much more consistently and accurately
- They can capture moments just too fast for the human eye to get, for example the Atlas detector in the LHC project can capture ~ 600000 frames per second while we can see at about 60
- Most of them are automatic so they can go around by themselves without any human interference
- They can entertain us and help us in certain tasks
- 10)Mass Production and Self-Replication
- Advanced Intelligence
- Easy to update
- Absence of Evolved Psychological Predispositions

IV. DEMERITS

- People in factories affected
- It needs a supply of power
- It needs maintenance to keep it running
- It costs money to make or buy a robot

V. APPLICATIONS

Robots can also be applied to do task such as:

- Multimedia applications [2]
- Creating System software [5]
- Embedded systems [6]
- Cloud computing [7]
- Mobile computing [4]
- Network management [17]
- NANO technology [8]
- Neural networks [9]
- Trading [16]
- Network security [15]
- Data flow supercomputer [3]
- Businesses [19]
- Accounting [18]

VI. RESEARCH ISSUES

1. High-level reasoning, creativity and cognition is challenging the applicability of robot.
2. Artificial Intelligence problems are more digital and data driven. So it needs security while digitising all data and providing security is a major research issue.
3. Avoiding Negative Side Effects: how do you stop a robot from knocking over a bookcase in its zealous quest to hoover the floor?
4. Avoiding Reward Hacking: if a robot is programmed to enjoy cleaning your room, how do you stop it from messing up the place just so it can feel the pleasure of cleaning it again?
5. Scalable Oversight: how much decision making do you give to the robot? Does it need to ask you every time it moves an object ?
6. Safe Exploration: how do you teach a robot the limits of its curiosity?
7. Robustness to Distributional Shift: how do you make sure robots respect the space they're in?
8. Game playing, photo identification, and semantic identification
9. Real-time algorithms for measurement, prediction, and control
10. Artificial intelligence and machine learning

11. Databases, Privacy & Internet security

VII.CONCLUSIONS

Challenging demands of users can be solved by robot banking. But the overall performance of banking entirely depends on software developed for robot. The robot can be best at performance provided the research issues can be resolved to make it more powerful. There by creating future genegation banking as 24X7 ROBOT BANKING working on all years, all months, all weeks, all days, all hours, all minutes, all seconds and even nano seconds.

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