GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 10, Issue 12, Dec. (2022)

THEORETICAL AND PRACTICAL ISSUES OF USING INDUSTRIAL ROBOTS IN SECTORS OF THE ECONOMY

Honboboyev Xakimjon Ikromovich
Kakanda State Pedagogical Institute

ANOTATION

This article covers the theoretical and practical issues of using industrial robots in the sectors of the economy of the Republic, as well as their mathematical writing, the formation and justification of a quality criterion, developing methods for mathematical modeling of the movement of industrial robots.

Keywords; industrial robots, intellectual robots, trajectory, determinized, stochastic, approximation, mathematical logic.

At the moment when modern information technologies have developed, robotics systems are consistently used in all sectors of the industry. Especially important in the production of industrial robots will increase the competitiveness of the product, the quality and quantity criterion, as well as the production capacity.

There are currently three generations of industrial robots. The first generation-robots whose management is based on a solid program (determinized), the second generation-robots that are subject to stochastic control, the third generation-intellectual robots. The theoretical issue of modeling and controlling the movement of industrial robots is divided into the mechanics of interconnected robots and the control of their movement

Developing methods for mathematical modeling of the movement of industrial robots, their mathematical writing, the formation and justification of a quality criterion, the construction of a trajectory of movement of robots, the development of kinematic and dynamic methods, their analysis and synthesis are included in the first issue. The main scientific issue of industrial robot motion control is the research and development of robot programming methods, the development of methods of algorithms for analysis and synthesis of robot motion control, the development of algorithms for stochastic control of robots using artificial intelligence elements, the development of principles of robot sensitivity, the conversion (rotation) and optimal use of sensor data are To solve both of the presented scientific problems, the use of a sufficiently large mathematical apparatus is required, which is different. Scientists from developed countries of the world with issues of design, modeling and control of the movement of industrial robots [2-13,14,15-24,27,30-33,33-34,38-41,42,56-60,68,77-79,84-87,89] in the works of scientists of our country [1,35-37,56,61,62,79,80,83], the necessary results were thoroughly studied and obtained. Currently, there are the following areas of scientific research work on industrial robots: 1. Kinematic, dynamic equations and control models of the movement of robots subordinate to the determinized control program. 2. Motion and control models of robots subordinate to stochastic control. 3. Motion and control models of intelligent robots based on mathematical logic. 4. Industrial robots sensitivity theory. 5. Theory of technical imaging systems. 16 6. Problem-oriented languages for industrial robots. Let us dwell in detail on this direction, since the subject and object of the study belong to the class of objects controlled by

stochastic control systems. An important difference between stochastic management methods from classical management is that the fulfillment of the management goal set in classical management is for one object, and in stochastic management methods the fulfillment of the management goal for several objects belonging to one defined class. Stochastic control theory developed rapidly with the advent of new flying machines. Currently, a lot of work has been done on the theory of stochastic systems, and the necessary results have been obtained in them. The principles of stochastic management are used on a large scale in various branches of industry, for example, in electronics and electrical engineering, chemistry, metallurgy, mechanical engineering, flight control and other fields. Stochastic control systems are divided into two large classes: self-organizing and self-adjusting systems. Self-organized systems characterize not only the change of parameters in the process of forming a control algorithm, but also the search for the necessary regulator structure to achieve the set goal. This class of stochastic management system is currently used on a large scale in practice, as it is simple to study and analyze. Self-adjustable systems, in turn, are divided into two large classes: searcher and non-seeker. Changes in the parameters of the control device in search engines will be available as a result of the search for extremum under the quality criterion based on the search engine. Models with expected dynamic properties in non-searchable systems are given in both transparent and non-disclosure views. 17 for the construction of stochastic control systems, the following methods are used: Lyapunov method, stochastic approximation method, target recurrent inequalities method, quadratic criterion of absolute stagnation, methods based on the identification approach, etc.k. Also, the use of Noravshan models in Noravshan management made it possible to create knowledge bases and expert systems of a new generation capable of storing and processing ambiguous information. In general, Noravshan models are an information-logical model of a system built on the basis of the theory of sets and logics. The Noravshan model is an information-logical model of a system based on Noravshan set theory and Noravshan logic. One of the characteristic signs of the complexity of building a model is the ambiguity of the structure or behavior of the original system. A prerequisite for the use of Noravshan models is the lack of information or the complexity of the system and the lack of quality information about the system. Nevertheless, interest in these issues has not subsided even today. Scientific research work is carried out in the following areas: - management of dynamic objects that cannot be made up of motion models; - synthesis of a stable scheme of stochastic control of nonlinear or linear nonlinear Objects; - research of convergence properties by parameters. In the movement of industrial robots under changing conditions, methods for determining images play one of the main roles. Traditional methods of identifying images are faced with the complexity of origin in a changing environment. The main reason for this complexity lies in the multi-variant movement of the robot in effective control and the difficulties arising in the formation of 18 moving obstacle images in the database . Currently, it is felt the need to improve the stochastic and Noravshan straightening (proofreading) methods of optimizing the robot for the formation of short and safe routes of movement in a changing environment. In particular, most of the methods developed do not sufficiently take into account the kinematic and dynamic characteristics of the robot in a changing environment .

REFERENCES

1. Khaidarova, S. "Sql-expressions That Manage Transactions." JournalNX: 307-310.
2. Normatov, R. N., M. M. Aripov, and I. M. Siddikov. "Some issues of analysis structural complex systems." International Journal on Orange Technologies 3.2 (2021): 59-62.
3. Siddikov I. M., Sh S. O. ABOUT ONE INNOVATION METHOD OF LOCALIZATION OF INDEPENDENT DIGITAL DEVICES //E-Conference Globe. – 2021. – С. 204-205.
4. Muydinovich, Rasulov Inom. "METHODOLOGY OF USING THE GOOGLE CLASSROOM MOBILE APPLICATION IN TEACHING INFORMATICS AND INFORMATION TECHNOLOGIES FOR SECONDARY SCHOOL STUDENTS." European Journal of Interdisciplinary Research and Development 3 (2022): 158-162.
5. Aripov, M. M., et al. "Fundamentals of creating the algebra science and algorithms." Solid state technology 63.5 (2020): 6094-6102.
6. Normatov, R. N., M. M. Aripov, and I. M. Siddikov. "Analysis Method of Structural-complex System Indicators by Decomposition Into Subsystems." JournalNX 7.04 (2021): 68-71.
7. O'Ktam, O., Li Jumanqo'Ziyev, and Islombek To'Lqinjon O'G'Li. "MAKTAB O 'QUVCHILARINING AXBOROT MADANIYATINI SHAKLLANTIRISHNING ASOSIY QONUNLARI VA TAMOYILLARI." Academic research in educational sciences 2.CSPI conference 1 (2021): 1073-1077.
8. Mamadjanova, S. V. "DESIGN FEATURES OF VIRTUAL LEARNING ENVIRONMENTS." European International Journal of Multidisciplinary Research and Management Studies 2.06 (2022): 1-5.
9. Shirinov F., Mamasoliyev A. AN INTELLIGENT COMPUTER NETWORK-BASED LEARNING PROCESS MANAGEMENT SYSTEM //Euro-Asia Conferences. – 2021. – Т. 3. – №. 1. – С. 55-57.
10. Shirinov F., Mamasoliyev A. A GENERAL DESCRIPTION OF THE HARDWARE AND SOFTWARE ENVIRONMENT USED TO ORGANIZE COMPUTER-BASED LEARNING PROCESSES //Euro-Asia Conferences. – 2021. – Т. 3. – №. 1. – С. 63-65.
11. Tokhirovna, Khakimova Yoqutkhon. "Stages Of Implementation Of Distance Learning In Higher Education." Texas Journal of Philology, Culture and History 1 (2021): 38-39.
12. Jo'rayev, M. (2022). Professional ta'lim jarayonida fanlararo uzvilik va uzliksizlikni ta'minlash o'quvchilari kasbiy tayyorgarligining muhim omili sifatida. Zamonaviy dunyoda amaliy fanlar: Muammolar va yechimlar, 1(29), 43
13. Toshpulatov, Raximjon I. "THEORETICAL FOUNDATIONS OF INFORMATION TECHNOLOGY." International Journal of Pedagogics 2.09 (2022): 53-57.
14. Йулдошев, Уткир, and Уктамжон Жуманкузиев. "Определение ведущих педагогических закономерностей и основополагающих принципов формирования информационной культуры детей школьного возраста." Общество и инновации 2.5/S (2021): 68-76.
15. Normatov, R. N., M. M. Aripov, and I. M. Siddikov. "Some issues of analysis structural complex systems." International Journal on Orange Technologies 3.2 (2021): 59-62.
16. Muydinovich, Rasulov Inom. "The Role of Digital Technologies in Growing Secondary School Students to the Profession." Eurasian Scientific Herald 6 (2022): 137-142.

17. Хайдарова, Сапияхон. "Создание SQL-запросов в реляционных базах данных." Вестник РГГУ. Серия: Информатика. Информационная безопасность. Математика 3 (2020): 8-19.
18. Marufovich, Aripov Masud, and Shirinov Feruzjon Shuxratovich. "BO 'LAJAK INFORMATIKA FANI O 'QITUVCHILARINING GRAFIK AXBOROTLAR BILAN ISHLASH KOMPETENSIYASINI RIVOJLANTIRISH." TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI 2.1 (2022): 183-187.