

Preface

Control technology has been in existence for the last 60 years. Throughout the decades, many developments have evolved in control and automation engineering. Especially, nowadays, when computers have become more popular, technology in control has progress to combine with computer technology for faster and more precise method of computations. Software control can take the place of hardwired control system economically. Hence, new control methods for real-time systems are progressively discovered and taught in institutions. Most engineering applications involve control function. Broadly speaking, there are many types of control technology in engineering domain. We have the electrical and electronics control design, microcontroller and embedded system programmings and control, as well as the mechatronics control system. The low-level assembly programming language performs basic control techniques as well as controlling the stepper motor. Besides, we can find control applications in big and complex industrial system. Power system analysis can predict, monitor and therefore, control the load flow network system. PLC system enhances the design of the elevator control system. We study process control engineering to apply the theory to the water control system. More advanced control technology such as the neural network machine learning technology finds its application in the chemical control plant. Furthermore, computer vision technique is being used widely in the manufacturing factories or the industries. As can be seen, the usefulness of real-time control engineering is applied to countless industrial applications.

The book introduces many different types of control with relevances to real life control systems design. Illustrative diagrams, circuits programming examples and algorithms show the details of the system function design. Readers will find various real-time control automation engineering practices and applications for the modern industries as well as the educational sectors.

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