Book Announcements

VUKOBRATOVIC, M., ET AL., ***Introduction to Robotics,*** Springer-Verlag, Berlin, 1989, 301 pages.

Purpose: This book discusses the details of robotics with the intent to increase interest in this area of research without extensively covering classical mechanics, systems theory, and computer engineering.

Contents: General introduction to robotics; manipulator kinematic model; dynamics and dynamic analysis of manipulation robots; control of robots; microprocessor implementation of control algorithms; industrial robot programming systems; sensors in robotics; elements, structures, and application of industrial robots; robotics and flexible automation systems; colored Petri nets.

VUKOBRATOVIC, M., ***Applied Dynamics of Manipulation Robots: Modelling, Analysis, and Examples,*** Springer-Verlag, Berlin, 1989, 471 pages.

Purpose: This is the first of two books on manipulation robots. It is devoted to the study of manipulation robot dynamics and its applications.

Contents: General information about robots; computer-generated mathematical models of manipulation robot dynamics; computer method for linearization and parameter sensitivity of manipulation robot dynamic models; appendices.

VUKOBRATOVIC, M., and **STOKIC, D.,** ***Applied Control of Manipulation Robots: Analysis, Synthesis, and Exercises,*** Springer-Verlag, Berlin, 1989, 470 pages.

Purpose: This is the second of two books on manipulation robots. It treats the problem of manipulation robot control.

Contents: Concepts of manipulation robot control; kinematic control level; synthesis of servo systems for robot control; control of simultaneous motions of robot joints; synthesis of robot dynamic control; variable parameters and concepts of adaptive robot control; control of constrained motion of robots; appendices.

KROTKOV, E. P., ***Active Computer Vision by Cooperative Focus and Stereo,*** Springer-Verlag, New York, 1989, 160 pages.

Purpose: The subject of active exploratory sensing in the context of spatial layout perception is explored in this volume.

Contents: An agile stereo camera system; focus ranging; stereo with verging cameras; cooperative ranging; merging multiple uncertain views; modeling sparse range data; conclusions; appendices.

VENKATARAMAN, S. T., and **IBERALL, T.,** (eds.), ***Dextrous Robot Hands,*** Springer-Verlag, New York, 1990, 345 pages.

Purpose: The aim of this book is to explore parallels in sensorimotor integration in dextrous robot and human hands. The book is an outgrowth of the workshop on dextrous robot hands that took place at the 1988 IEEE conference on robotics and automation.

Contents: Lessons learned from human hand studies; dextrous hand-control architectures; lessons learned from dextrous robot hands; panel discussion.

THOMPSON, S., ***Control Systems: Engineering and Design,*** Longman Scientific and Technical, U.K., and Wiley, New York, 1989, 364 pages.

Purpose: This book addresses the complete control system design problem starting from the development of a model, through the design of a controller, to the application and implementation of techniques on equipment accessible to students.

Contents: Control system design and modeling; differential equations and Laplace transforms; block diagrams; design concepts in the *s*-plane; stability; root loci; frequency response design methods; controller and compensator design; identification; case studies; design and identification programs.

Errata

Optimal Strapdown Attitude Integration Algorithms

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[JGCD 13, pp. 363-369 (1990)]

SEVERAL typographical errors appeared in the published paper. The equations should read as noted here.

Page 364:

Algorithms D and E should read

$$\Delta\theta_c(n) = \frac{1}{2}\sum_{m=2}^{M}\theta_{m-1}\times\Delta\theta_m + A\sum_{m=1}^{M}\Delta\theta_m(1)\times\Delta\theta_m(3) + B\sum_{m=1}^{M}\Delta\theta_m(2)\times\left[\Delta\theta_m(3)-\Delta\theta_m(1)\right]$$

Page 366:

The first part of Eq. (9) should appear as follows:

$$\Delta\theta_c(n) = \sum_{m=1}^{M}\frac{1}{2}\int_{t_{m-1}}^{t_m}\theta(t,\,t_0)\times\omega\,\mathrm{d}t$$

In the definitions associated with Eq. (9), the first one should read

$$\theta(t,\,t_{m-1}) = \int_{t_{m-1}}^{t}\omega\,\mathrm{d}t$$

Page 367:

Equation (27) should read

$$\Delta\theta_c = ab\left[\frac{1}{2}\frac{\lambda^3}{6} - \frac{\lambda^5}{120} + \frac{\lambda^7}{5040} - \cdots\right]K$$

Page 369:

Equation (39) should appear as follows:

$$<\delta\omega_c> = \int_0^{\infty}\Phi(f)E(\omega)[1-\sin\omega T/(\omega T)]\,\mathrm{d}f$$