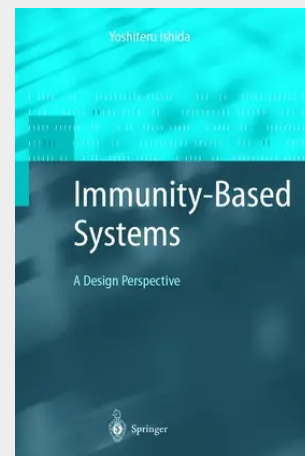


Immunity-Based Systems

A Design Perspective

A framework for communication intensive autonomous agents inspired from the immune system is presented in this text. With the rapid increase of computational power and networking technology similarity between computer and biological systems may now practically work. The framework presented fills the need to guide the implementation of such a "biological" system. The focus is on the field of diagnosis and control. Several sample applications and simulations are presented.

After I came to know Jerne's network theory on the immune system, I became fascinated with the immune system as an information system. The main prototypes for biological information systems have been the neural systems and the brain. However, the immune system is not only an interesting information system but it may provide a design paradigm for artificial information systems. With such a consideration, I initiated a project titled "autonomous decentralized recognition mechanism of the immune network and its application to distributed information processing" in 1990 under a Grant-in-Aid for Scientific Research on a Priority Area ("Autonomous Distributed Systems") supported by the Ministry of Education, Science, and Culture. During the project, I promoted the idea that the immune system could be a prototype of autonomous distributed systems. After the project, we organized an international workshop on immunity based systems in 1996 in conjunction with the International Conference on Multi-Agent Systems held in Kyoto, Japan. Recently, there have been several international conferences related to topics inspired by the immune system and an increasing number of research papers related to the topic. In writing this book, a decade after the project, I still believe that the immune system can be a prototype, a compact but sophisticated system that nature has shown us for building artificial information systems in this network age of the twenty-first century.



106,99 €
99,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783540008965
Medium: Buch
ISBN: 978-3-540-00896-5
Verlag: Springer
Erscheinungstermin: 05.04.2004
Sprache(n): Englisch
Auflage: 1. Auflage 2004
Serie: Advanced Information Processing
Produktform: Gebunden
Gewicht: 1000 g
Seiten: 177
Format (B x H): 155 x 235 mm

