Engineering Smart Systems: Undergraduate Topics in Computer Science

Engineering Smart Systems is a rapidly growing field that combines computer science, electrical engineering, and mechanical engineering to create systems that can sense, reason, and act. This field is essential for developing the next generation of smart devices, such as self-driving cars, medical devices, and home appliances.

Pervasive Computing: Engineering Smart Systems (Undergraduate Topics in Computer Science)

by Elizabeth McDavid-Jones

★★★★★ 5 out of 5

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Enhanced typesetting	: Enabled
Print length	: 230 pages

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In this article, we will explore some of the undergraduate topics in computer science that are relevant to engineering smart systems. These topics include:

- Artificial intelligence

- Machine learning

- Computer vision

- Natural language processing

- Robotics

We will also discuss the career opportunities for graduates with degrees in computer science and engineering smart systems.

Artificial Intelligence

Artificial intelligence (AI) is the field of computer science that deals with the creation of intelligent agents. These agents are able to sense their environment, reason about it, and act in order to achieve their goals. AI is used in a wide variety of applications, including:

- Self-driving cars

- Medical diagnosis

- Natural language processing

- Robotics

Undergraduate courses in AI typically cover topics such as:

- Search algorithms

- Planning algorithms

- Machine learning

- Natural language processing

- Computer vision

Machine Learning

Machine learning is a subfield of AI that deals with the creation of algorithms that can learn from data. These algorithms can be used to make predictions, detect patterns, and classify data. Machine learning is used in a wide variety of applications, including:

- Self-driving cars
- Medical diagnosis
- Natural language processing
- Robotics

Undergraduate courses in machine learning typically cover topics such as:

- Supervised learning
- Unsupervised learning
- Reinforcement learning
- Neural networks
- Deep learning

Computer Vision

Computer vision is a subfield of AI that deals with the creation of algorithms that can interpret images and videos. These algorithms can be used to detect objects, track objects, and recognize faces. Computer vision is used in a wide variety of applications, including:

- Self-driving cars
- Medical diagnosis

- Security and surveillance

- Robotics

Undergraduate courses in computer vision typically cover topics such as:

- Image processing

- Feature detection

- Object recognition

- Tracking algorithms

- Deep learning for computer vision

Natural Language Processing

Natural language processing (NLP) is a subfield of AI that deals with the creation of algorithms that can understand human language. These algorithms can be used to translate text, summarize text, and generate text. NLP is used in a wide variety of applications, including:

- Machine translation

- Text summarization

- Chatbots

- Search engines

Undergraduate courses in NLP typically cover topics such as:

- Morphology

- Syntax

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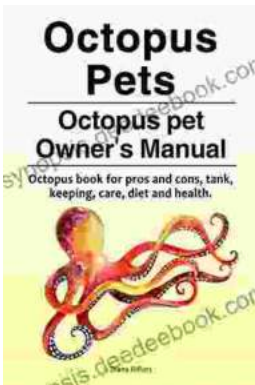
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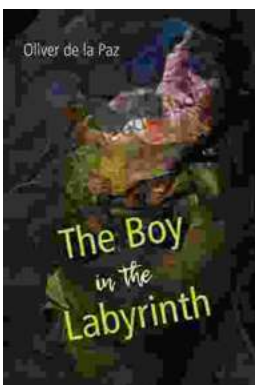
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