Applied machine learning for health and fitness [a practical guide to machine learning with deep vision, sensors, IoT, and VR /

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Monografía

Explore the world of using machine learning methods with deep computer vision, sensors and data in sports, health and fitness and other industries. Accompanied by practical step-by-step Python code samples and Jupyter notebooks, this comprehensive guide acts as a reference for a data scientist, machine learning practitioner or anyone interested in AI applications. These ML models and methods can be used to create solutions for AI enhanced coaching, judging, athletic performance improvement, movement analysis, simulations, in motion capture, gaming, cinema production and more. Packed with fun, practical applications for sports, machine learning models used in the book include supervised, unsupervised and cutting-edge reinforcement learning methods and models with popular tools like PyTorch, Tensorflow, Keras, OpenAI Gym and OpenCV. Author Kevin Ashley--who happens to be both a machine learning expert and a professional ski instructor--has written an insightful book that takes you on a journey of modern sport science and AI. Filled with thorough, engaging illustrations and dozens of real-life examples, this book is your next step to understanding the implementation of AI within the sports world and beyond. Whether you are a data scientist, a coach, an athlete, or simply a personal fitness enthusiast excited about connecting your findings with AI methods, the authors practical expertise in both tech and sports is an undeniable asset for your learning process. Todays data scientists are the future of athletics, and Applied Machine Learning for Health and Fitness hands you the knowledge you need to stay relevant in this rapidly growing space. You will: Use multiple data science tools and frameworks Apply deep computer vision and other machine learning methods for classification, semantic segmentation, and action recognition Build and train neural networks, reinforcement learning models and more Analyze multiple sporting activities with deep learning Use datasets available today for model training Use machine learning in the cloud to train and deploy models Apply best practices in machine learning and data science

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Contenido: Part I: Getting Started -- Chapter 1: Machine Learning in Sports 101 -- Chapter 2: Physics of Sports -- Chapter 3: Data Scientist's Toolbox -- Chapter 4: 3D Neutral Networks -- Chapter 5: Sensors -- Part 2: Applied Machine Learning -- Chapter 6: Deep Computer Learning -- Chapter 7: 2D Body Pose Estimation -- Chapter 8: 3D Pose Estimation -- Chapter 9: Video Action Recognition -- Chapter 10: Reinforcement Learning in Sports -- Chapter 11: Machine Learning in the Cloud -- Chapter 12: Automating and Consuming Machine Learning

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