Algorithm Alchemy : unlocking the secrets of machine learning

Aranha, Vivian,
instructor

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Machine learning is transforming industries, and mastering its core algorithms is essential for AI-driven innovation. This course provides a structured approach, starting with fundamental concepts and Python implementation. You'll explore supervised learning models, from linear regression to advanced ensemble techniques like random forests and gradient boosting. Each algorithm is implemented from scratch, reinforcing both theory and hands-on coding skills. Beyond supervised learning, you'll dive into unsupervised techniques such as clustering and dimensionality reduction. Implement K-Means, DBSCAN, autoencoders, and t-SNE to uncover hidden patterns in data. The course also introduces reinforcement learning and deep learning, covering Q-learning, policy gradients, CNNs, RNNs, and transformers--key techniques driving AI advancements. By the end, you'll have a strong grasp of machine learning models and their real-world applications. Whether you're building predictive models, optimizing AI workflows, or advancing in deep learning, this course equips you with practical, job-ready skills. What you will learn Implement key machine learning algorithms using Python Master regression, classification, and clustering techniques Develop neural networks and deep learning models Apply reinforcement learning for AI-driven decision-making Optimize and fine-tune models for real-world applications Gain hands-on experience with supervised and unsupervised learning Audience This course is designed for data scientists, software engineers, and AI enthusiasts who want to deepen their understanding of machine learning algorithms and their practical applications. It is ideal for Python programmers eager to implement models from scratch and professionals looking to transition into AI-driven roles. Students and researchers aiming to build predictive models, optimize workflows, or explore deep learning techniques will also benefit. About the Author Vivian Aranha: Vivian Aranha is a seasoned technology professional with nearly two decades of experience in the industry, specializing in Artificial Intelligence. With a Bachelor's in Information Technology (2004) and a Master's in Computer Science (2006), he has built a strong foundation in computing and innovation. For the past eight years, he has been deeply involved in AI, working on machine learning, deep learning, and intelligent systems while also mentoring aspiring professionals. His ability to simplify complex concepts and bridge theory with real-world application makes him a sought-after expert in the AI landscape

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Autores: Aranha, Vivian, instructor

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Baratz Innovación Documental

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es