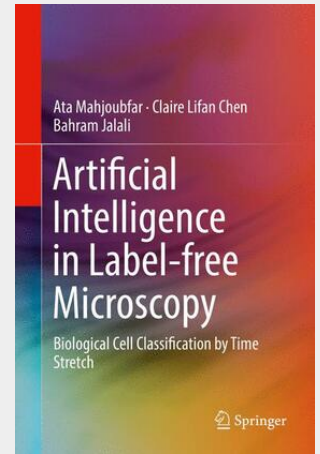


Artificial Intelligence in Label-free Microscopy

Biological Cell Classification by Time Stretch

This book introduces time-stretch quantitative phase imaging (TS-QPI), a high-throughput label-free imaging flow cytometer developed for big data acquisition and analysis in phenotypic screening. TS-QPI is able to capture quantitative optical phase and intensity images simultaneously, enabling high-content cell analysis, cancer diagnostics, personalized genomics, and drug development. The authors also demonstrate a complete machine learning pipeline that performs optical phase measurement, image processing, feature extraction, and classification, enabling high-throughput quantitative imaging that achieves record high accuracy in label-free cellular phenotypic screening and opens up a new path to data-driven diagnosis.

This book introduces time-stretch quantitative phase imaging (TS-QPI), a high-throughput label-free imaging flow cytometer developed for big data acquisition and analysis in phenotypic screening. TS-QPI is able to capture quantitative optical phase and intensity images simultaneously, enabling high-content cell analysis, cancer diagnostics, personalized genomics, and drug development. The authors also demonstrate a complete machine learning pipeline that performs optical phase measurement, image processing, feature extraction, and classification, enabling high-throughput quantitative imaging that achieves record high accuracy in label-free cellular phenotypic screening and opens up a new path to data-driven diagnosis. • Demonstrates how machine learning is used in high-speed microscopy imaging to facilitate medical diagnosis; • Provides a systematic and comprehensive illustration of time stretch technology; • Enables multidisciplinary application, including industrial, biomedical, and artificial intelligence.



128,39 €

119,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783319514475

Medium: Buch

ISBN: 978-3-319-51447-5

Verlag: Springer International Publishing

Erscheinungstermin: 27.04.2017

Sprache(n): Englisch

Auflage: 1. Auflage 2017

Produktform: Gebunden

Gewicht: 424 g

Seiten: 134

Format (B x H): 160 x 241 mm

