

INDEX

- advanced driver assistance systems, 11
- air traffic monitoring, 17-18
- air traffic surveillance, 17
- analog-to-digital converters, 149
- application-specific integrated circuits, 4
- artifacts, 8

- background subtraction, 10, 56-57, 60, 64
- biomedical, 1, 7-8, 37, 48
- bit error rate, 144, 147
- bluetooth low energy, 11, 145, 147

- c (programming language), 69
- confusion matrix, 103, 105, 109, 138
- convolutional neural network, 11, 94, 101, 118-19, 121
- classification, 40, 91-92, 94, 101-03, 105, 109, 116-18, 120-22, 127

- digital signal processing, 1-4, 9-10, 149
- digital-to-analog converter, 2
- discrete cosine transform, 12, 163
- discrete sine transform, 163

- electromyography, 10, 35-36, 41, 49
- edge detection, 20, 70, 93

- fast fourier transform, 11, 41, 132
- field-programmable gate array, 131
- foreground, 56, 76
- functional range of motion, 39-40
- feature extraction, 70, 93, 99

- gaussian frequency shift keying, 11, 143-44, 146, 152-55
- global positioning system, 17
- ground receiving station, 10, 15

- high-efficiency video coding, 12, 164

- histogram, 56-60, 62, 72, 93
- instantaneous energy, 48, 50
- intelligent transportation systems, 55
- internet of things, 6, 141
- interpolation, 71, 73
- intensity, 2, 58, 60, 68, 86, 121
- IoT *see* Internet of Things
- leap motion sensors, 92
- light imaging detection and ranging, 116
- LIDAR *see* light imaging detection and ranging
- matlab, 61, 69, 133-34, 138
- maximum likelihood estimation, 20, 22, 24
- memory, 43-44, 50, 102, 134, 174
- morphological, 56-57, 61, 78, 80-81
- multiangulation, 19
- multilateration, 9-10, 17-19, 22, 25, 28
- multilayer perceptron, 101
- multimedia, 5-6
- multiplexer, 134, 174
- muscle fatigue, 33, 38-39, 42, 49
- musculoskeletal disorders, 10, 33-35
- navigation, 7, 17
- optical, 56, 67-68, 70
- object detection, 118, 125
- object removal, 76-77, 79
- prominent frequencies, 130, 137
- precision, 40, 62, 64, 100-01, 106-07, 109, 122, 124-26, 137, 151, 158, 167
- python, 101
- radar, 1, 6-7, 9, 11, 16, 25, 94, 116, 118
- radio frequency, 11, 19
- reconstructed template, 80-82
- recurrent neural network, 11, 102-03
- regression, 92, 99, 119, 122, 132, 138
- rgb, 95, 99, 103, 116, 122
- sampling frequency, 46, 134, 136
- segmentation, 70-71, 84, 88, 93, 121
- seismology, 7
- sensor, 1, 5-8, 11, 70, 91-95, 99, 103, 115-17, 131
- short-time fourier transform, 10, 42
- skew detection, 73, 75, 83-84

- sign language, 9-10, 91-93, 95, 100-103, 105, 110
- signal-to-noise ratio, 26, 158-59
- sonar, 6-7
- spatial, 9, 17, 118, 167
- spectrogram, 10, 41, 44-47, 50

- thermal camera, 114-16
- thresholding, 25, 56-58, 61, 64, 71, 74
- time difference of arrival, 9, 15, 19
- time-frequency distribution, 41, 45, 48
- time-frequency representation, 40, 44-45
- traffic surveillance, 17, 53
- training, 5, 94, 99-01, 105, 107, 109, 116, 120, 122-25, 146
- transducer, 8

- transforms, 2, 71, 167, 169-72, 178
- transponder, 9, 15-17
- triangle threshold, 56, 59, 64
- unified architecture, 164, 170-74, 176-78

- vision, 5, 10, 95, 98, 117
- voice activity detection, 9, 11, 129-31, 139

- wavelet, 10, 25, 41, 43-44, 49-50
- wearable, 1, 6, 8
- weather, 18, 56, 59, 61, 64, 117, 122, 127

- you only look once, 121
- YOLO *see* you only look once