

# Index

- 2.5D, 287, 323, 329, 342
- 3D, 3–6, 10, 17, 323
- 3D capture, 345, 350–352, 365–366, 374
- 3DMD Inc., 345
- absolute conics, 73, 384–385
- accumulated, 250, 330–333
- affine:transformation, 44, 221–222, 410–412, 419–421, 423
- Ahuja, N., 325
- Alhazen, 10, 12
- aliasing, 30, 105, 173, 337
- Alston, Richard, 6, 348
- animation, 351–352
- anisotropic diffusion, 280
- anthropometry, 353
- anti-correlation, 243
- area-based matching, 212, 238–273
- Aristotle, 9
- aspect ratio, 27
- backward warp, 319, 419
- Bacon, Roger, 10, 12
- Balasuriya, Sumitha L., 171, 173, 186
- band pass, 124, 171–173, 181, 244, 274, 284–285
- base line, 32, 35–36, 61
- belief propagation, 231–232
- Bellotto, Bernaldo, 11
- Beucher gradient, *See* morphological:gradient
- Bishop, R. L., 14
- black level, 166, 244, 273
- blooming, 31
- blue screen, 331, 340, 346
- body
  - human, 4–6, 287, 330, 332, 343, 347–349, 351–355, 357, 359, 365–366, 370, 374, 442–443, 445, 447–448, 456
  - scan, 347, 349, 351
  - scanner, 4, 347–348, 352
- Bolt Beranek and Newman Ltd., 345
- breast, 347, 353, 363, 365
- Breast Analysis Tool (BAT), 363
- breast scan, 347, 353, 363, 365
- breast scanner, 363
- Brewster, Sir David, 13
- brightness constancy constraint, 315
- British Technology Group Ltd., 345
- C3D, 286–288, 335, 347, *See also* Turing Institute, Glasgow University
- calibration
  - pattern, 38, 70–73
  - target, 346, 370
- camera
  - autocalibration, 373
  - affine, 29, 94
  - calibration methods, 70–74
  - coordinate system, 24–28, 33–34, 37, 41, 44, 56, 71–72, 74–75, 79, 91–93
  - model, 10, 24–29, 71
  - obscure, 9, 10, 11, 12
  - pin-hole model, 17, 24–29, 31

- camera (*Continued*)
  - real systems, 222
  - with simplified perspective, 29
- Canal, Antonio, 10
- Canaletto, *See* Canal
- Canniesburn Plastic Surgery Unit, 363
- canonical stereo setup, *See* stereo vision system
- CCD device, 30–31, 73, 215
- central point, *See* point:focal
- centroid, 44, 148–149
- class
  - constructors, 79, 80, 87, 89, 159, 321, 419, 436, 442, 444, 447, 451–454
  - FixedFor*, 78, 426
  - MMultiPixelFor*, 76–78
  - MorphologyFor*, 158–159
  - Pixel\_SAD\_Metric*, 318
  - Pixel\_SCP\_Metric*, 318
  - Pixel\_SSD\_Metric*, 318
  - policy, 448–450
  - Real\_2D\_Point*, 320–321, 416–418
  - TAreaBased\_StereoMatcher*, 318
  - TBinomialFilter*, 181, 452
  - TCoordTranfromEngine*, 415–416
  - TDanglingImageFor*, 78
  - TDisparityMap\_CrossCheck\_Matcher*, 318
  - TDisparityOriented\_AreaBased\_Matcher*, 318
  - TDOImagePyramids*, 181, 452
  - TFeatureBased\_StereoMatcher*, 318
  - TGaussianFilter*, 181, 452
  - TGaussianImagePyramids*, 181–182, 184–185, 452
  - TGenericTransformEngine*, 319, 415–416, 448
  - TImageFor*, 78–81, 84–86, 153, 156, 159–160, 218, 255, 425–427, 436, 449, 451
  - TImagePyramids*, 181
  - TImageTemplateOperationFor*, 87–88, 91, 157–158, 444
  - TImageWarp*, 416, 418–419, 447–448
  - TInvLogPolar\_TransformEngine*, 321
  - TLaplacianImagePyramids*, 181, 185
  - TLinearTransformEngine*, 415–416, 445–448
  - TLogPolar\_TransformEngine*, 320–321
  - TMultiChannellImageFor*, 79, 84–85, 87, 156
  - TNonLinearTransformEngine*, 319–320, 415–416, 447–448
  - TPixelInterpolation*, 416–419, 431
  - TPointOriented\_AreaBased\_Matcher*, 318
  - TProxyImageFor*, 78, 451
  - trait, 448–450
  - TRealLinearFilter\_Factory*, 452
  - TStereoMatcher*, 318
- Cline, H. E., 333–334
- clinical photography, 352–353
- clone, 358–359
  - 3D, 359
- close-range photogrammetry, 5, 181, 345
- coarse-to-fine matching, 280, 283–284
- co-linear configuration, 33, 55–57, 66, 296, 327, 331, 387
- collagen, 363
- colour, 4, 21–22, 31, 46, 49, 76, 78–79, 84, 94, 127–128, 141–144, 146, 199, 202, 228, 240, 265, 305, 313, 331–332, 337, 347–348, 351, 359, 370–371, 373, 414, 420, 423
- Computed Tomography, 333, 367–368
  - spiral, 367
- confidence map, 273, 278, 286–287, 332, 338
- conformation, 357–359
- conics, 73, 382–385
- continuity constraint, 68–69, 244, 276, 291
- contrast, 35, 78, 84, 91, 146, 166, 199, 244, 311, 370, 412
- convolution, 95–99, 101, 107–108, 114, 122, 141, 146, 151–155, 166, 168, 170, 174, 177–178, 180, 182, 234
  - kernel, 122, 153, 234, 285
- Coons patch, 363, 365
- cornea, 18
- corner, 14, 37, 46–49, 71, 93, 105, 137, 144–152, 229, 266, 288–289, 292–295, 317, 337, 363
- cornerness measure, 149–151

- detection, 46, 48, 144–151
  - parametric model fitting, 144
- correlation, 19–22, 46–47, 49, 233, 238, 242–245, 250, 256, 266, 274–278, 280–282, 285, 295, 301, 339
  - coefficient, 241
  - statistical, 242–245
- correspondence, 4–5, 18, 24, 44, 46, 49, 68–69, 93, 165–166, 168, 193, 209, 221, 233, 235, 239, 257, 273–274, 276, 278–279, 289, 302–303, 305, 317, 326, 357, 360, 420–427
- cosine angle, 243, 331
- Cramer’s rule, 226
- CREATEC, 347
- cross-checking, *See* occlusions:left-right checking
- cross-correlation, 97, 274–276
- cross ratio, *See* projective:invariance
- cumulative image method, 209–210
- Curless, B., 329–332
- curvature, 18, 27, 146–147, 277, 358, 365
  
- D’Aguillon, Francois, 12, 13
- da Vinci, 9–12, 21
- DEM (Digital Elevation Model), 374
- Descartes, 12
- difference of Gaussians, 95, 126, 170, 179, 452
- differentiation, 95, 105–115, 199, 122, 132, 150, 162–163, 393
  - discrete, 95, 105–115
  - sampled derivative, 107
- diffusion, 126, 168, 231–232, 234, 280
- Dimensional Imaging Ltd., 346
- Dirac impulse, 176, 274
- discontinuity, 224, 227, 232, 309, 317
- disparity
  - estimation, 223–226, 275–278
  - map, 76, 204, 214, 224, 226–230, 234–241, 246, 250, 252, 254, 256–260, 264–265, 267, 269, 271–272, 277–278, 283, 286–288, 295, 303, 304, 314, 343–344, 370–374, 410, 412
  - space, 230, 238, 250–252, 254, 256, 259, 271, 304
  - horizontal, 36–37, 39, 229, 235, 254, 256, 287, 371–372
  - sub-pixel accuracy, 255
  - vertical, 22, 36–37, 196, 229, 239, 286, 290, 293, 372
- displacement, 3–4, 6, 76, 165, 196, 225, 229, 237–241, 250–251, 273, 287, 314, 330, 332, 354, 358–360, 409
  - field, 238, 359
- distance minimization, 44
- distribution
  - Cauchy, 194, 196, 202
  - Gaussian, 30, 51, 53, 95, 194, 232, 302, 404, 406
  - Poisson, 30, 405
- dot product, 197, 243–244, 331–332, 384
- double-pod, 346
- dual absolute conics, 73, 385
- dual conic, 382–383
- Dürer, A., 11
- dynamic programming, 298–305
- dynamic range, 30, 238, 245, 256, 273, 280, 427
  
- Ealing Studios, London, UK., 347
- edge detection, 115–127, 163, 289
- eigenspace, 359–362
- eigenvalue, 36, 42–43, 46, 135, 137–138, 149–150, 400
- eigenvector, 42–43, 135, 138–139
- eight-point algorithm, 40–41, *See also* fundamental matrix:computation methods
- elastic match, 232, 273–288, 321
- elastic warp, 274
- entropy, 202–205, 232
  - conditional, 202–203
  - joint, 203–205
- epipolar
  - constraint, 17, 33, 56, 66, 256
  - discrete geometry, 17, 31–35, 44–48, 55, 93

- epipolar (*Continued*)
  - geometry, 17, 32–36, 38, 44–48, 55, 93
  - line, 17, 32–36, 38, 55–57, 66, 245, 256, 290–291
  - plane, 32–33, 66
  - point, 32
- essential matrix, 34–35, 41, 326
- Euclid, 9–10, 12
- excitatory, 170, 177, 190
- extended search space, 220
- extrema, 121, 126, 168–169, 224, 237
- extrinsic parameters, 26, 28, 33, 74, 327, 370
- face
  - human, 5–6, 166, 287, 332, 343, 345–350, 353–361, 364, 366–368, 370, 374, 432
  - scanner, 345–346
  - scans, 347–350
- Facial Analysis Tool (FAT), 354
- facial cleft, 361
  - unilateral, 361
- false target, 245, 280
- Faugeras, Olivier D., 35, 67, 94, 207, 322
- feature tracking, 315
- filter, 21, 30, 95–104, 118–122, 147, 162, 164, 167, 169–171, 173, 175–178, 181, 184, 192, 234, 240, 279, 283, 290, 443, 452
  - binomial, 95, 100–104, 121, 147, 272, 452
  - Gaussian, 100–101, 121–122, 169–171, 173, 175, 177–178, 181, 184, 192, 283, 452
  - impulse response, 97, 176
  - low-pass, 20–21, 30, 99–101, 121, 167, 169, 234, 240, 279, 290
  - Savitzky-Golay, 100, 108–116, 118–120, 147, 162, 164
  - separability, 95, 97–100, 443
  - symmetrical mask, 96–97, 102
- first fundamental form, 399
- flat shading, 289
- Florack, L., 191
- focal
  - length, 25, 27, 32–33, 37, 56, 60, 71, 73
  - point, 24
- foot
  - human, 5, 346–347, 349
  - scan, 5, 347
  - scanner, 346–347
- Fourier transform, 102, 123, 170, 172
- fovea, 18–19
- Frisby, 20, 289
- Frobenius norm, 43, 401
- fronto-parallel configuration, 344
- fundamental matrix, 17, 34–35, 37, 40–41, 43–50, 53, 58, 66, 72–74, 94, 98, 193, 221, 289, 327
  - affine, 34–35, 37, 40–41, 43–50, 53, 58, 66, 72–74, 98, 193, 221, 289, 327
  - computation methods, 55, 445
  - parametrization, 399
- gain, 233, 242, 256, 273, 365
- Galen, 9–10
- generic 3D model, 351
- genetic optimization for stereo, 237
- geodesic, 38, 355–357
- Glasgow Royal Infirmary, UK., 364
- gradient, 21–22, 66–70, 105, 107, 117, 119–120, 127–131, 136–137, 140–143, 146, 156, 193, 227, 235–236, 265, 280, 285, 291, 296–299, 321, 345
- graph cut, 6, 193, 231–232, 306–314, 321
- ground-truth data, 61–65, 226–229
- half-octave, 170–173, 175, 187, 190, 287
- Hartley, R.I., 35, 42, 53, 73–74, 94, 322, 342, 389, 401
- HDTV, 209, 350
- head
  - human, 22, 335, 344, 347–348, 353, 367
  - scan, 347–348
  - scanner, 347–348
- heat diffusion, 168
- hole filling, 332–333

- homogeneous coordinates, 24, 28, 41, 45, 91–93, 377–379, 382–383, 386, 410–411
- horopter, *See* Vieth–Müller circle
- human
  - form, 342, 374
  - surface anatomy, 279, 374
  - surface measurement, 350
- Human Visual System, 6, 12, 18–23, 93, 223, 229, 289, 323
- HVS, *See* Human Visual System
- hyperplane, 385–386
  
- ideal points, *See* point:in infinity
- image element, *See* pixel
- image matching, 95–164
- image pyramid, 6, 165, 167, 173–174, 176, 184, 191
- image scale, 6, 150, 165–166, 191, 281–282
- image
  - fuzzy subtraction, 216
  - interlaced, 79, 85
  - multi-channel, 85–87
  - non-interlaced, 79, 85
  - plane, 24–25, 28, 32–34, 41, 43, 55, 66, 92
  - pyramid
    - Gaussian, 175–178, 181–185, 190, 192, 451
    - Laplacian, 102, 181, 183–185, 190
  - templates, 79–80, 84, 87, 91, 425
  - thresholding, 127, 269, 306
  - transformation
    - Census, 193, 198, 209, 211, 216–218, 221, 260, 264, 266–267, 286, 292, 294, 344
    - log-polar, 218–221
    - Rank, 211, 216
    - reduced Census, 212–214
    - sparse Census, 214–215
    - warping, 409–428
- immersive 3D TV, 374
- implicit function, 330–331
- inhibitory field, 177
- inliers, 51–54
  
- integral histogram, 209
- integral image, *See* cumulative image method
- integration
  - multi-view, 325–342
  - surface, 341
- interpolation
  - bicubic, 268, 278, 448
  - bilinear, 58, 319, 412–414, 448
- inter-scanline, 302
- intrinsic
  - blur, 177, 281, 284
  - parameters, 17–18, 24, 27, 59, 73–74, 237, 324, 326
  - scale, 282
- invariance, 43, 108, 126, 134, 138, 149, 168, 199, 242, 245, 273
  - to rotation, 108, 130–132, 134, 137–138, 140, 199, 245
- iso-surface, 332–333
- Iterated Closest Points (ICP), 355
  
- jaw, 353–354, 356
- Jin, Zhenping, 274–276, 280–283, 286
- Julesz, Bela, 14, 20–21
  
- Kepler, 12
- kernel, 36, 100–101, 104, 122–123, 144, 147–148, 166–169, 175–176, 178, 181, 190, 232, 234, 244, 276, 279, 284–285
- Kircher, 12
- Kruppa equations, 73–74
  
- labelling problem, 144, 306, 309, 311–314
- Lagrange multiplier, 134–135
- landmark, 353–358, 363, 365, 367–368
- Laplace operator, 120–122
- Laplacian of Gaussian, 95, 120–126, 163, 170–172, 177–179, 181, 190, 293
- Levoy, M., 329–332
- Lindeberg, Tony, 126, 168, 179
- line, in infinity, 380–381
- linear algebra, 74, 97, 424–427
- LMedS, 46
- local deformation model, 235

- local neighbourhood, 46, 68, 125, 129–137, 141, 158, 209, 212, 214, 216, 225, 233–234, 237, 239, 266, 306
- local structure, 21, 127, 129, 131–132, 137–139, 143, 148–149, 232, 270
  - ideal, 131, 137, 140
  - types, 137
- longitudinal change, 5, 353
- Longuet-Higgins, 22
- Lorensen, W.E., 333–334
- Luong, Q.-T., 35, 94, 322
  
- Magnetic Resonance Imaging, 333
- Mallot, 20, 93
- manifold, 5, 78, 144, 146, 274, 323, 329, 331, 338, 354, 357, 368, 451
- Mao, Zhengfang., 355–359
- Mao, Zhili., 355–359
- marching cubes, 6, 323, 330–331, 333–337, 340–341
- Marconi, 367
- Markov random field, 231, 301
- Marr, 19, 274, 289–290
- Marr-Poggio, 290, 345
- mastectomy, 365
- match confidence, 283, 286, 338, 340
- matching
  - corner based, 292–295
  - disparity-oriented scheme, 240, 250–256, 259, 271
  - gradient based, 193, 296–298
  - histograms, 205–206
  - match aggregation, 251–252, 256
  - measures
    - Cauchy distance, 196, 202
    - Covariance-Variance, 46, 195
    - Dixon-Koehler, 198–199
    - Gaussian distance, 202
    - Hamming, 198, 221, 260
    - Kullback-Leibler distance, 204, 206
    - Mahalanobis, 201–202
    - mutual information, 202–205
    - Normalized Sum of Cross Products, 195–196
    - Sum of Absolute Differences, 195
    - Sum of Cross Products, 196
    - Sum of Squared Differences, 195
    - symmetric Kullback-Leibler distance, 203
    - Tanimoto, 198, 260, 267
    - Weighted Tanimoto, 198
    - Zero Mean Normalized Sum of Squared Differences, 195
    - Zero Mean Sum of Absolute Differences, 195
- point-oriented scheme, 245
- Shirai Method, 295–296
- zero-crossing based, 19–20, 117, 289–291
- Matlab, 59, 75, 94, 114, 161–162, 181, 186–191, 455
- matrix
  - covariance, 98, 201–202
  - pseudoinverse, 424
  - rotation, 24, 26, 33, 56–57, 74, 325
  - skew symmetric, 34, 98, 201–202, 380
  - symmetric, 98, 148, 380, 382
  - translation, 24, 26, 33, 44, 56, 75
- maximum likelihood, 302–303
- Mayhew, 20, 22, 289
- Merlin<sup>®</sup> Indigo, thermal camera, 369
- Metric
  - Frobenius, 43, 199
  - Minkowski's, 199
  - unit distance, 200–201
- Mokhtarian, Farzin, 191
- moments, 43, 45, 109, 148, 331
- morphological
  - dilation, 127, 159
  - erosion, 127
  - gradient, 127
  - operators, 127, 157–161
- motion-capture, 351–352
- Mowforth, Peter, 286
- Müller, H., 13
- multi-modal, 367–370
- multi-pod, *See* multi-view
- multi-view, 6, 257
  
- Newton, 9, 12, 102
- Niblett, Timothy B., 286

- Nishihara, 345
- noise
  - Gaussian, 30, 194, 404, 406
  - Poisson, 30
- non-rigid registration, 351
- normal equation, 424
- normalization, 44–45
- nostrils, 359
- Nyquist, 30, 171, 173, 284
  
- objective assessment, 352
- occlusion, self, 331
- occlusions
  - bimodality, 224
  - constraint, 224
  - left-right checking, 224
  - match goodness jumps, 224
  - null method, 224
  - point ordering constraint, 224
- octave, 170–175, 186, 283
- optic nerve, 12–13
- optical flow, 193, 209, 314–318
- ostiotomy, 355–356
- outliers, 46–47, 49–54
- overloaded, 78, 86–87, 318–319
  
- Panum, 274–275
- parallax, 3–4, 6, 10, 22, 37
- Pettigrew, 14
- phase difference, 197
- photogrammetry, 3–6, 10, 22, 36, 181, 286–287, 331, 335, 345–347, 368
- photogrammetry:stereo, 3–4, 6, 10, 22, 36
- pixel, 24–25, 27–28, 30–31, 34–35, 46, 48, 61, 76–78, 130–136
- pixel
  - depth, 76, 319
  - labelling problem, 312–314
  - multi-channel, 85–87
  - position, 76–78
  - value, 412–414
- Poggio, 274, 289–290
- point
  - circular, 382–384
  - coordinates, 384–385
  - correspondence, 420–427
  - in infinity, 378
  - normalization, 44–45
- population norms, 383–384
- Potts model, 236, 306, 312–314
- Precision 3D Ltd., 346
- pre-knee circuit, 30
- Principal Components Analysis (PCA), 359
- principal
  - axis, 25
  - point, 25, 32, 56, 332
- probabilistic density function, 205
- procedure
  - Compute\_SAD*, 246, 249–251, 253
  - ComputeAreaMatch*, 246–248
  - ComputeDisparity\_Global*, 251, 253
  - ComputeDisparity\_Local*, 246–247
  - Dilate*, 158
  - DisparityFromDisparitySpace*, 251–252, 254–255
  - DisparityMapCrossChecking*, 257–258
  - Generate\_SavGol\_2D\_Coordinate\_Matrix*, 246, 249–251, 253
  - GetPixel*, 246–247
  - HorzIDConvolve*, 251, 253
  - Orphan\_Conjugate\_Matrix*, 245–247, 251, 260–262
  - Orphan\_Inv\_Matrix*, 158–160
  - Orphan\_Linear\_Solution*, 251–252, 254–255
  - Orphan\_Mult\_Matrix*, 257–258
  - Orphan\_PseudoInv\_Matrix*, 116, 118
  - Orphan\_PseudoInv\_Matrix*, 78, 81–83, 85, 154, 160–161, 217, 219, 249, 253, 255, 258–259, 436, 449, 451
  - VertIDConvolve*, 252, 254
- Procrusthese, 354, 368
- projective
  - duality, 379–380
  - homography, 386–387, 410
  - invariance, 387–388
  - plane, 29, 118, 426
  - space, 29, 325, 329, 395, 410
  - transformation, 24, 28–29, 39, 71, 93, 214, 230, 252, 254, 324, 327–329

- quality measure
  - number of pixels rejected by the left-right consistency, 149, 228
  - parameter free measures, 228
  - percentage of incorrect matches on the ground truth, 227
  - RMS on ground-truth data, 227
  - synthesized view prediction errors, 227, 325, 327–329, 378–381, 384–386, 395, 410
- Radial Basis Function (RBF), 358
- random dot stereogram, 14, 20–21
- Random Sample Consensus (RANSAC), 51
- range map, 286–287, 329–332, 338–339
- receiver operating characteristic, 144
- reconstruction of 3D space, 323–327
- registration error, 358
  - geometric, 358
  - topological, 358
- relative entropy, *See* matching:measures:
  - Kullback-Leibler distance
- render:photorealistic, 351, 353, 368
- retina, 4, 12–14, 18–19
- Romeny, Bart M. Ter Haar, 191
- run-length encoding, 338
  
- scale invariance, 166–167
- scale-space, 165–191
- scale-space tracing, 167, 281–282, 287
- scale-subdivision, 284–285
- scan-line, 191
- scotomas, 347
- segmentation, 22, 127, 202, 228, 262, 331–332, 339, 365
  - binary, 331
  - colour, 331–332, 433
- semi-pyramid, 179–181
- SIFT (Scale Invariant Feature Transform), 126
- signal saturation, 30
- signed distance function, 330–331, 333
- Silsoe Research Institute, UK, 365
- simulated annealing, 237, 307
- single-pod, 345
  
- singular value decomposition, 36, 72, 163
- skeleton, 351–352
- skin, 5, 350, 353, 365, 367–368
- smoothness constraint, 279–280
- space
  - intersection, 350
  - reconstruction, 323–342
- spatial
  - frequency, 170, 172–173, 177, 223, 274–275
  - homogeneity, 168
  - isotropy, 168
- speckle texture illumination, 345
- spectral response, 101, 103–104, 148
- Sporring, Jon, 191
- Standard Template Library, 436–438
- static cues, 313
- stereo
  - acuity, 280
  - correspondence, 165–166, 233, 235, 273–274, 305, 317
  - vision system
    - calibration, 74–75
    - standard, 17, 37, 56, 68, 296, 354
- stereo-baseline, 47, 212, 230, 346
- stereo-pair, 3–6, 14, 165–167, 174, 224, 229, 273, 280, 285–287, 292–294, 323, 329, 331–332, 335, 338, 344, 347–351, 353, 363, 365, 370
- stereoscope, 3, 13
- stereoscopy, 13
- STL, *See* Standard Template Library
- strobe lighting, 350
- structural tensor, 46, 49, 127–144
  - coherence, 132, 140
  - scale-spaces, 143–144
  - trace, 137–139
- sub-pixel, 255
- sub-sample, 173, 175–177, 187
- sub-skin, 368
- surface
  - anatomy, 279, 352–354
  - integration, 330, 332, 338–341, 368
  - mesh, 338, 341
  - range, 330–331
  - symmetry, 140, 288

- Tao, Gegang., 351–352
- tensor
  - bifocal, 40, 289
  - contraction, 399–400
  - contravariant, 395–399
  - covariant, 396–399
  - invariants, 401
  - metric, 399
  - product, 400
  - reduction to principal axes, 400
  - summation, 399
  - symmetrical, 134, 136
  - trifocal, 39–41, 289
- texture, 4–5, 19, 127–128, 227, 233, 266, 350–352
  - illumination, 400
  - projection, 395–396
- thermal
  - camera, 39, 395
  - image, 368–369
  - imager, 397–399
- Thorn EMI Ltd., 345
- topology, 200, 338
- transformation, projective, 24, 27–29, 39, 71, 93, 214, 230, 252, 254, 324, 327–329
- triangulation, 324–325
- Tricorder Ltd., 345
- Trucco, Emanuelle, 27, 94, 325–326
- Turing Institute, Glasgow, UK., 286, 335, 345–347
- UML, *See* Unified Modelling Language
- Unified Modelling Language, 431–436
- University College London, 345
- University of Glasgow, 336, 345, 363, 368
- Urquhart, Colin W., 286
- van Hoff, Arthur, 175, 286
- vector
  - dot product, 243–244
  - field, 76, 314, 317, 357–360, 364
  - mean, 201
- Verri, A., 27, 94, 325–326
- veterinary medicine, 352–370
- video-camera, 346, 350
- Vieth–Müller circle, 13
- virtual human, 347, 350–352
- vision, binocular, 3, 18, 93
- visual
  - area, 14
  - axis, 18
  - cortex, 14, 19
  - illusions, 23
- Vitello, 12
- VRML, 287, 289, 368
- Wheatstone, 13
- Wicks & Wilson Ltd., 352
- winner-takes-all, 235
- winner-update technique, 207–208
- Witkin, A., 168
- WTL, *See* winner-takes-all
- zero-crossings, *See* Laplacian of Gaussian
- zero-surface, 3, 6, 10, 19–20
- Zisserman, Andrew, 35, 53, 94, 322, 387

