

INDEX

- abrasion of objects, 42
- absorption of radiation, 72–73, 148–50, 153–57, 258
- acceptance, 5, 143, 149, 157, 162–66, 177–78, 190
- accessibility, 33, 41, 54–55, 65, 85, 109, 129–30, 179, 191
- accuracy, 5, 7–9, 11, 14, 19, 26, 44–45, 51, 55, 58, 108, 110, 128–34, 137, 144, 150, 157, 170–72, 177, 183, 190, 197, 199–200, 202, 225, 227, 239, 248, 250, 253–54, 259
- acquisition, 10, 40–46, 49–53, 110–13, 115, 128, 130–34, 136–37, 142–43, 145–49, 151, 153, 155, 157, 167, 179, 204, 217–18, 221, 228, 232, 239, 247–50, 253–55
- adaptation, 13, 160–61, 172, 197, 200, 212, 239
- adhesion, 69
- aerial, 19, 69, 219, 243–44
- aerotriangulation, 132, 231
- aesthetics, 33, 131, 190
- Aeternitas, goddess, 41
- Afghanistan, 232, 234
- ageing, 80, 239
- aggregation of metadata, 161
- airbrush, 44–45
- Albers, Josef, 192
- Alexandria, 89, 212
- algorithm, 11, 20, 28, 33, 112, 167, 179–82, 225–28, 230, 237, 250
- alignment, 14, 25–26, 28–29, 33, 52, 68, 82–83, 131–33, 150, 200–201, 223, 248
- alloy, 224, 259
- alteration, 79–80, 167, 183, 189, 239
- aluminium, 77
- ambient, 48, 209, 249–50
- ambiguity, 5, 9, 177, 183, 189
- amphora, 10, 118
- amplitude, 153, 156
- Amsterdam, 89, 212
- analogue, 10, 167
- analysis, 4, 6–11, 14–15, 19, 26, 39–40, 42–43, 46–47, 51, 55–59, 72–76, 83, 85, 103, 110, 122–24, 126, 134–37, 145–48, 152, 164–65, 169–72, 177, 181, 186, 191, 204–5, 213–19, 221–23, 228–30, 235, 240, 243–44, 247, 250, 257–59
- anastylolysis, 183
- ancient, 18–22, 33, 36, 42, 61, 108, 183, 187–88, 198, 209, 227–28, 234, 250
- animation, 91, 95, 97, 100–101, 128, 134
- Antikythera Mechanism, 240
- antimony, 58
- antistatic foam, 118
- Antoninus Pius, emperor, 41, 61
- aperture, 23, 47, 148, 217
- appearance, 12, 20, 48–49, 92, 94–95, 97, 104, 110–111, 118, 123, 133, 165, 170, 183
- application, 6–7, 11, 18–20, 23, 33, 40, 42–43, 46, 63, 65, 80, 83, 85, 88–91, 96–97, 99–102, 110, 142–43, 160–61, 164–71, 173, 177–82, 185–86, 195, 198–99, 202–12, 214, 217–21, 224–28, 232, 239, 246, 250, 254–55, 259
- approach, 4, 16, 20, 23–26, 32, 36–37, 51, 58, 65, 83, 89, 91, 104, 111, 114, 122, 128, 137–38, 149–50, 165, 176, 182, 204, 212, 218, 222, 228, 247–48
- approximation, 23, 26, 29–31, 33, 238

- arabesques, 72–73, 79, 84–85
- archaeology, 4, 10–12, 14–15, 18–24, 28, 31–33, 36, 38, 42, 62, 64, 88–90, 92, 94, 96–97, 99, 102, 104, 108, 123–27, 134, 138, 170, 182–83, 186–88, 196, 200, 209, 214, 219, 221, 227–229, 234–35, 239–40, 244, 246, 253–55, 259
- archaeometry, 259
- Archaic, 21–22
- Archeoguide project, 209
- Archimedes, 178, 240
- architecture, 10, 22, 123, 183, 196, 201, 204–05, 209, 232–33, 255
- archive, 15, 19, 22, 32, 65, 69, 72, 82, 108–9, 115, 123, 128, 161–62, 190, 202, 205, 214, 228, 232, 234–35, 246, 255
- argument, 162, 177, 182–84, 188–89, 191
- array, 80, 110, 144, 148, 186, 200, 223
- artefact, 6, 9–11, 14–15, 19–29, 31–33, 44–45, 89–90, 94, 96–99, 109, 115, 161, 179, 187, 203, 213–14, 225, 228–29, 234–35, 239
- artist, 18, 41, 69, 73, 79, 88, 92–97, 118, 144, 176–77, 186–87
- arts, 10, 62, 176–78, 182–89, 203
- artwork, 168–69, 187, 204, 258
- assessment, 20, 33, 36–37, 43, 47, 55, 61–62, 68, 81, 84–85, 115, 122–29, 142, 144, 149, 155, 157, 181, 195, 202, 209, 246, 250
- asset, 20, 138, 161–73, 182, 225
- Athens, 209, 227–28, 240
- atomization, 221–22
- attributes, 11–12, 16, 146–47, 226
- attribution, xxxviii, 9, 21–22, 54, 63, 177
- audio, 38, 91, 211
- augmented, 68, 83, 181, 207–9
- Augustus, emperor, 89
- aureus, coin, 60
- AustroHungarian period, 92–99
- authenticity, 32, 38, 42–43, 64, 68, 72–73, 85, 115
- automation, 11, 20, 23, 32, 47, 49, 63, 112, 179, 186, 213, 225, 227, 230, 232, 234–35, 243
- avatar, 209
- Avignon, 224
- axial illumination, 41
- axioms, 165
- axis of symmetry, 26–29, 31, 108, 137, 166
- azurite, 146, 156–57
- Balkans, 95
- Bamiyan Buddha, 232, 234
- bandwidth, 110, 146, 153
- banknotes, 40, 186
- barcodes, 208
- barium, 75
- baseline, 200
- basemaps, 72, 83–84
- bastion, 88–97, 99–104, 199, 211, 229, 247
- beam, laser, 198–200, 223, 258
- benchmark, 118, 227
- Berwickshire, 246
- binder, 77, 146
- biology, 123, 129, 257
- biquadratic, 237
- bismuth, 58
- black, 49, 75, 77–79, 130, 146, 150, 154, 170, 241
- blurring, 23, 183
- bone, 10, 247
- Boolean operations, 26, 30–31
- Bosnia, 90–91, 93, 97, 100–101, 103–4
- botanical specimens, 186
- branching stories, 212
- Bratislava, 186
- Bremen, 122–38, 199, 229, 231, 243, 253–54
- Bremerhaven, 122, 126
- brightness, 12, 200, 226, 248
- broch (Atlantic roundhouse), 246
- bromine, 58
- bronze, 21, 43, 60, 241
- browse, 89, 94, 99
- brush, 42, 44–45

- Bucharest, 109, 112, 116, 118
 Buddha, 232, 234
 building, 11, 68–69, 90–91, 101, 122,
 126, 134, 180, 199–201, 204–5,
 235, 253, 255
 bundle adjustment, 223, 226, 230,
 232, 243
 Buonarrotti, Michelangelo, 198, 202–3
 Burgundy, 68, 222–23
 buried, 19–33, 89
 burnt umber, 146
 Byzantine, 13–14, 178

 calcium, 58, 74–75
 calibration, 7, 9, 51, 112, 142, 144,
 153, 179, 190, 201, 219, 226, 228,
 232, 244, 247, 258–59
 calliper, 5
 camera, 8, 14–15, 20, 23, 26, 41, 47,
 50, 52–53, 72–73, 79, 82, 84–85,
 97, 99, 111–13, 128–29, 132–33,
 142–46, 153, 167, 199–201,
 207–9, 217–19, 223, 225–30, 234,
 237, 239–41, 246–50
 canvas, 144
 capture, 14, 24, 26, 41, 47, 49, 61, 80,
 85, 89, 110–13, 133, 143, 163–69,
 196, 201, 209, 214, 218, 227–28,
 230, 237, 239, 241, 244, 247–50
 carbon, 57
 carmine, 146, 157
 Cartesian coordinate system, 31
 carving, 214, 241
 cast, 203–4
 casting, 97, 204
 categories, 7, 43, 90, 108, 195, 212,
 226
 cathedral, 222–24
 cave, 214, 239
 cemetery, 21
 Cennini, Cennino, 144
 centroid, 201
 ceramic, 22, 109, 111–12, 118,
 258–59
 certified, 9, 153, 254
 Chagall, Marc, xxxv, xxxvii, xlv

 challenge, 4, 16, 18, 41, 82, 111,
 115, 122–23, 125–26, 128, 131,
 137–38, 142, 176–77, 180–87,
 196–97, 207, 209, 234, 241
 chamber (for sample), 257
 change, 7, 33, 42, 44–45, 47, 63, 79,
 88, 95, 108, 111–15, 123–24,
 126–27, 137, 142, 201, 211, 218,
 226–27, 235, 254
 channel, 115, 217–18
 chaos of information, 191
 char, 224
 characterization, 9, 13, 35, 46, 52, 55,
 77, 79, 142, 155, 217, 221–24,
 257
 characteristics, 5, 7, 11–13, 22, 32, 47,
 68, 109–10, 142, 144, 148, 153,
 157, 164–70, 181, 196–97, 205,
 221, 223, 225–26, 257
 charcoal, 10, 144
 Chartres Cathedral, 222–23
 chemical composition, 6, 42, 55, 58,
 64, 257
 chemistry, 56
 chlorine, 58
 chroma differences, 149
 chronology, 18, 40–46, 241
 church, 90, 168, 209
 cinema, 89, 96, 99, 211
 circulation of coins, 62–63
 clarity in communication, 184
 classification, 7, 9–11, 20, 33, 39–40,
 56, 108, 110, 146, 160–61,
 163–64, 166–68, 171–72, 183,
 225–26, 246
 clay, 18, 21–22, 26, 31, 77, 118, 237
 cleaning, 38–39, 44–45, 63
 climate, 123, 129
 close-range, 15, 199, 201, 229, 235
 close-up photography, 74, 85, 213
 cloud (3D point cloud), 14–15, 24,
 26, 51–55, 82, 132–34, 137, 183,
 188, 199–202, 225, 230–31, 243,
 245–46, 250, 253
 Cluny Abbey, 209
 coarseware, 21

- coating, 44–45, 144
- coat of arms, 118
- cobalt, 58
- codex, 118
- coefficient, 8, 24, 149, 237–38
- coexistence of disciplines, 184
- coherence of methods, 64, 123, 184, 207
- coin, 10, 14–15, 36–65, 186–87, 199, 213–14, 229–30, 237, 243, 247, 257, 259
- coinage, 37–38, 40, 43, 54, 61, 259
- co-lighting, 207–9
- collaboration, 4–5, 16, 18, 32, 36–37, 60, 109, 127, 176–82, 184–85, 187–91
- collection, 19–20, 22–24, 27, 33, 36–37, 39, 42, 55, 62–65, 91, 94, 109–11, 125, 165, 170, 179, 185–87, 199, 219, 226, 239, 259
- co-localization, 207–8
- colorchecker chart, 143–45, 148, 150–51
- colorimetry, 85, 143, 145, 148, 150–51, 231
- communication, 4, 19, 32, 38–39, 61, 63–64, 83, 88–91, 138, 160, 176–81, 183–89, 191, 204, 211, 221, 254
- community of researchers, 20, 122–26, 143, 178, 180, 185, 191, 239
- comparative studies, 15, 43, 60–61, 64–65, 72, 246
- comparison of results, 6–7, 23–24, 36, 40–41, 43–45, 47, 49, 51–52, 54–55, 57–58, 60, 63–64, 79, 81, 110, 113, 115, 122–24, 128–30, 132, 134–37, 142–44, 148–55, 157, 171, 180, 187, 208, 214, 218–19, 228, 231, 235, 238–39, 243–44, 246, 248–49
- compatible standards, 41, 161, 201
- complementary method, 43, 56, 58, 115, 176, 184, 214, 228, 258
- complexity of tasks, 4, 12–15, 20, 25, 75, 85, 93, 129, 133, 138, 146–48, 160–63, 178, 181–83, 191, 197, 203, 209, 226, 240, 248
- composition of object, 21, 42, 44–45, 54–55, 57–58, 60, 71, 97, 110, 186, 257–59
- computation, 10, 15, 26, 44–45, 52–55, 112, 161, 178, 186, 190, 195, 198–99, 209
- concentration, 58, 258
- concept, 4–6, 88, 91–92, 101, 104, 127–28, 164–65, 176, 182, 191, 209, 211
- concrete, 130, 255
- condition, 6–9, 12–14, 20, 22, 33, 37, 39, 60–61, 68, 79, 83, 85, 109, 123, 125, 129, 133, 160, 164, 168, 171–72, 186–87, 195, 219, 222, 229, 241, 248
- conformity to standards, 7
- conservation, 4, 21, 33, 36–38, 40, 61–65, 70, 72, 75, 79–80, 83, 85, 94, 108–9, 115, 122–27, 129–30, 133, 138, 142–43, 162, 169–70, 173, 177–78, 183, 186–87, 190–91, 203–4, 221, 227, 235, 255
- conservator, 21, 24, 37–39, 42, 44–45, 123, 125, 129, 179, 186, 222, 235
- consolidation of surface, 80
- construction, 11–12, 14, 41, 83, 96, 112, 124, 126–27, 163, 182, 240
- contact, 13, 110, 165, 196, 228, 234, 240, 253–54
- contamination, 42, 44–45, 57, 61
- content, 19, 42, 56, 61, 89–90, 92, 94, 102, 161, 163–67, 179–80, 187–88, 211–12, 217–18
- context, 5–6, 10–11, 16, 21, 42, 65, 94, 109, 129, 134, 165, 183–84, 187, 196, 212, 228, 235, 253
- continuity, 65, 146, 191
- continuous, 108, 110, 146
- contrast, 49, 149, 165, 177, 208, 217, 247, 250

- convergence of disciplines, 184
 co-occlusion, 207–9
 cooperation, 185, 187–88, 254
 coordinated research, 142, 157, 219
 coordinates, 3D, 8, 14–15, 27–28, 31,
 124, 130–33, 148, 199–202, 207,
 225, 237–38, 246, 249, 253–54
 copper, 54, 56, 61, 73, 77–80, 224
 coprolites, 10
 copyright, 37
 cornice, 80, 85
 correlation, 8, 15, 154, 226, 231, 249
 correspondences, 226, 243, 257
 corrosion, 58–60, 258
 Côté d'Or, 69
 counterfeit coins, 42, 64
 Countess of Nevers, 69–72, 78, 223
 courtly love, 68, 71
 crack, 60, 74, 110, 202
 craquelure, 239
 creation, 16, 19, 23, 32, 99, 118, 212,
 221, 244
 creative, 177, 189
 CRISATEL project, 143
 criticism, 31, 39, 43, 61, 84, 100, 137,
 151, 176–77, 184, 188–91, 247,
 259
 crossdisciplinary research, 16, 60,
 177, 180, 184–85, 190
 Cucuteni culture, 109, 111, 118
 culture, 10, 21, 109, 118, 176–77, 182,
 184, 188, 221, 255
 curator, 21, 37, 42, 108–9, 177, 182,
 187, 203–4, 228
 Cyrillic, 118

 damage, 20–21, 26, 60, 63, 68, 142,
 229, 244
 damp objects, 125
 DARIAH project, 178
 database, 19–20, 62, 118, 179, 209,
 211, 235, 250
 dating, 10, 14, 21, 64, 69, 118, 126,
 203, 246
 daylight, 132–33, 241
 Dead Sea Scrolls, 212

 debasement of coinage, 61
 debate, 176, 182, 184, 259
 decision-making, 33, 65, 110, 122–23,
 126–29, 172, 183, 185, 204–5,
 222
 Declaration of Independence, 185
 decoration, 21–22, 29, 33, 41, 68–72,
 74–75, 77–80, 82–85, 118, 179,
 186, 241
 deformation, 28, 122–24, 127–29,
 134–38, 164, 169–70, 172–73,
 187, 200, 225, 235, 254
 degradation, 33, 123, 129, 222
 deification of Faustina, 40–41
 denarius, 37–43, 56–57, 61, 63–64,
 186
 dendrochronology, 122, 126
 Denmark, 126, 254–55
 density, 24, 54–55, 62, 137, 149,
 200–201
 depth, 49, 111, 167, 195–98, 207, 209,
 213, 226, 248
 dervish, 91
 descriptor, 61, 111, 226
 design, 31, 36, 41–42, 60, 89, 92, 94,
 97, 100, 110, 115, 118, 122–23,
 128, 143–44, 146, 152, 161–62,
 179–81, 186, 201, 207, 218, 237,
 240, 254
 destruction, 11, 68, 90, 232, 234, 244,
 258
 detection, 8, 10–11, 26–28, 43, 58–59,
 63, 74, 77, 80, 82, 84, 110, 124,
 137, 142, 146, 148, 156, 186, 208,
 213, 219, 223, 257–59
 deterioration, 122–23, 183
 deuteratedtriglycine, sulphate, 77
 deviation, 8, 51, 56, 149
 diagnostic, tests, 221
 dialogue, 180, 188–89
 dies for coins, 40, 42, 60, 63
 diffraction, 213, 221, 224, 258
 diffuse, 23, 112–13, 144, 151, 176, 217
 digitization, 18–20, 23–26, 28, 31–33,
 64, 96, 109–17, 123–24, 130, 179,
 186–87, 190, 195–98, 202, 214, 250

- dimensional monitoring, 235
- Dionysus, 22
- direction, 12–13, 41, 46, 78, 84, 88, 111, 115, 170, 180, 200, 203, 221, 237–39
- disabled visitors, 65
- discipline, 4–5, 16, 18, 36, 101, 123, 160–61, 176–84, 188–90, 205
- discourse, 109, 176–77
- discovery, 11, 18, 21, 69, 102, 108–9, 122, 126–27, 223, 234, 240
- discrepancies, 4
- discrimination of details, 7–8, 11–12, 81, 142, 149, 151, 156, 226
- disintegration of wood, 234
- display, 8, 18–22, 33, 39, 43, 62–65, 83, 88–91, 96–99, 104, 109, 115, 122, 124–25, 163, 178, 190, 199, 203, 257
- dissemination, 14, 31–32, 36–37, 43, 62, 65, 68, 83, 168, 178, 185, 188–90, 202, 229, 244, 246
- distilled water, 42, 44–45
- distortion, 10, 47, 50, 128, 136, 189, 239
- distribution, 14, 24, 26, 28, 51, 60, 142, 153, 191, 222, 230, 237
- documentary film, 92, 102–4
- documentation, 4–6, 19, 21, 31–32, 36–37, 39, 43, 51, 55, 58, 62–63, 65, 68, 72, 83, 85, 108–13, 115, 118, 123–24, 129, 142–44, 149, 160, 165, 176–77, 179–81, 183, 190, 195, 198, 200–201, 203–5, 214, 217, 219, 225, 229, 234–35, 239, 241, 248, 255
- domain of knowledge, 4–5, 16, 20, 110–11, 129, 137, 161, 164–66, 181, 196, 209
- dome photography, 46–50, 239–40
- drawing, 20–21, 95, 97, 101, 109, 123, 127, 144, 178–79, 182, 205
- drone survey, 219, 243
- DSLR camera, 14, 23
- Dublin Core System, 115
- Duke of Burgundy, 68–69, 71, 79
- Dupré, Jules-Louis, 239
- dysprosium, 144, 150
- earthquakes, 110
- earthworks, 244, 246
- Eckhel system of coin classification 40
- ecofacts, 10–11
- edge, 8, 21, 52, 60, 80, 122, 213, 250
- education, 19, 22, 32–33, 88, 90, 110, 122, 128, 160, 176, 179, 182, 187–88, 209, 212
- efficiency, 19, 23, 43, 82, 143, 217, 226, 234
- electrochemistry, 36
- electrodes, 258
- electromagnetic radiation, 8, 111
- electronics, 10, 12, 124, 134, 190, 253, 257
- electron microscopy, 40, 43, 77, 221, 257
- electrons in X-ray fluorescence, 257–58
- electro-optical measurement, 166
- electrum coinage, 259
- elevation map, 49, 95, 204, 245–46
- embellishment, 73, 79
- embodied cultural heritage, 108
- emission spectrum, 199–200, 221, 223, 257–58
- Empire, Roman, 40, 61, 63, 89
- empirical methods, 177, 196
- encoding of knowledge, 28, 160, 162, 166
- encrustation, 39
- end-user, 85, 108–9, 129, 137, 197, 229
- energy, 43, 74, 77, 199, 221–23, 257–58
- engagement, 16, 88, 91, 95, 101, 104, 129, 176, 178, 181–82, 186, 188, 191, 211
- engineering, 13, 36, 127, 129, 138, 160, 176–77, 179, 182, 187, 189–90, 202–5, 219
- enrichment, 58, 258–59
- entertainment, 88–89, 207, 211–12

- environment, 16, 20, 39, 89, 91–92,
94, 99, 103, 123, 187–88, 191,
205–9, 211–12, 235, 255
- Ephesos, 13–15
- epipolar geometry, 231
- erbium, 144, 150
- erosion, 24, 204
- error, 7, 9–10, 26, 33, 42, 44–45,
58, 110, 149, 154–55, 179–80,
189–90, 254, 258
- estimation, 20, 44–45, 51, 136–37,
217, 225–26, 238, 258
- ethics, 42, 129, 134
- Etruscan graves, 89
- Europeana, Data, Model, 161, 179
- evaluation of research, 31–32, 84,
100–101, 103–4, 115, 127, 135,
137, 148, 164, 186, 227–28
- evidence, 4, 10–12, 14–15, 23, 42, 61,
68, 72, 165, 176–78, 191, 246,
259
- examination, 21, 37, 39, 41–43, 45, 47,
49, 51, 53, 55, 57, 59, 61, 63–65,
72, 74–75, 80, 84–85, 177, 186,
239
- excavation, 14–15, 18–19, 21–22,
31–33, 38, 94–95, 134, 183, 200,
227, 229, 234, 239, 244, 253, 255
- excitation source, 221, 223, 257
- exhibition, 18, 21, 33, 37, 88–91, 94,
96, 109, 125, 133–35, 203, 212,
255
- expectation, 181
- experience, 9, 23, 61, 63–64, 88–90,
95, 100, 103, 109, 129, 138, 143,
179–82, 184, 188–90, 211–12
- experiment, 12, 15, 23, 36, 41, 64,
100, 111, 115, 187–88, 238
- expertise, 4, 15–16, 18, 31–32, 36–38,
43, 60–61, 64, 82, 84, 97, 101,
122, 124, 127–28, 134, 138,
160–61, 164–65, 176–77, 185,
187, 225
- explanation, 4–5, 21, 63, 124
- exposure, 14, 23, 42, 44–45, 47, 54,
68, 72, 79, 156, 188, 247
- extraction, 11, 20, 26, 28, 31, 47, 96,
111, 149, 151–52, 155–57, 226,
234, 257–58
- façade, 235
- false-colour image, 115
- Faustina, I, Diva, wife, of Antoninus
Pius, 37–41, 43, 56–57, 60, 63,
186
- feedback, 95, 115, 122, 165, 253
- Ferrara, 90
- ferrogalic ink, 118
- fidelity of representation, 250
- fieldofview, 24
- fieldwork, 138, 241
- figurine, 214
- filter, 23, 72, 81, 111, 113–15, 137,
142–43, 146, 169, 200, 241, 248
- fine details, 15, 52, 55, 61–62, 152,
155–57, 188–89, 202, 217, 235,
249–50, 254
- fineness, 42, 61
- fineware, 21
- fired clay, 118
- Fisheye lens, 14
- flaking, 80
- Flanders, Margaret of, 68–71
- flare in lens, 23
- flash illumination, 41, 47, 237–38,
241
- flat, 7, 49, 64, 110–11, 144
- flatbed scanner, 39
- Florence, 143, 202
- flowers in decoration, 69, 71, 79–80
- fluorescence, 40, 74, 150, 178, 224,
257–59
- fnumber of lens, 213
- foam, polyethylene, 118
- focus, 5, 10, 14, 18–19, 24, 48, 72, 75,
89–90, 122, 128, 133, 142, 162,
179, 196, 209, 213–14, 221, 223
- foil, 75, 78–79, 85, 224
- forgery, 40, 63–64, 178
- Forma Urbis Romae project, 179
- fortification, 93–94, 227
- fortress, 88–89, 91–97, 99, 101, 103

- fossils, imaging, of 237
- Fourier transform, 77, 213, 258
- fragment, 14, 18–25, 27, 29, 31–33, 76–77, 96, 179, 183, 186, 240
- frame, 138, 217–18
- frequency, spatial, 12, 111
- fringe projection, 8, 248, 250
- f-stop, aperture of lens 213
- FTIR spectroscopy, 76, 78, 258
- fusion of data, 43, 64, 111, 122, 128, 179, 207, 226
- gallery, 39, 62, 109, 115, 143, 177, 238–39
- gaming, computer-based, 83, 89, 92, 101, 198, 207, 212
- gamma correction, 49
- Gaussian distribution, 153
- generation of knowledge, 4, 8, 14, 16, 23, 26, 31, 33, 112, 115, 132, 134, 164, 166–67, 169, 171–73, 186, 188, 198–99, 213, 225, 231, 234–35, 237, 241, 243, 257–58
- geology, 257
- geometry, 12, 14–15, 19, 21, 36, 40, 43, 47, 49, 52, 54–55, 61, 63, 70, 97, 102, 104, 110–11, 134, 148, 151, 169, 181, 190, 195–96, 201, 209, 226, 228–31, 237–38, 243, 247, 253
- georeferencing, 136–37, 245–46
- geospatial science, 204–5
- Germolles, Château de, 68–71, 73, 75, 77–85, 186, 199, 207, 221–24, 229, 233, 237, 243, 257
- gilding, 75, 79–80
- girdle for structural support, 122, 127
- glaze, 77–79
- gloss, 144, 151, 238
- glue, 24
- glycol, polyethylene, 124, 126
- gold, 43, 58, 60, 77–80, 85, 144, 224
- goodnessoffit, 149
- grading scales for coins, 61
- graphical representation, 11–12, 32, 62, 81, 89, 195, 222
- graphite, 144
- grass, 246
- grating, diffraction 75
- graves, Etruscan, 89
- grayscale, image, 73
- Greece, 18–19, 22, 209
- Greek, 19–21, 23, 25, 27, 29, 31, 33, 183, 234
- Grenoble, 124
- ground, 13, 24, 26–27, 44–45, 51, 61, 74, 115, 130–33, 144, 186, 201, 243, 246
- guidance, 18, 91, 160, 180, 187, 200
- guidelines, 7, 50, 64, 110, 129, 143, 189–90, 198, 250
- gulf of incomprehension, 176
- gypsum, 144, 157
- gyroscope, 207
- halogen, 47, 72–73
- Hals, Frans, 239
- hammering, 56
- handling of object, 15, 21, 44–45, 49, 61, 63, 137, 142, 160, 195, 239
- haptic technology, 63
- harbour, 21, 228
- harvesting data content, 161
- hatchings, 85
- heart-metal, 42
- heat, 80–81
- helium, 44–45, 54
- hemisphere, 237
- hemispherical harmonics, 238
- Henry VIII, King, 124
- herbarium, 186
- heritage, cultural, 4–7, 9–12, 16, 20, 26, 37, 43, 56, 62–65, 68, 88–90, 100–4, 108–10, 113, 115, 118, 123–24, 129, 137, 142–44, 157, 160–68, 176–83, 186–91, 195–204, 209, 212–13, 219, 221, 224–29, 232, 235, 239, 255–59
- Herzegovina, 90, 93, 97, 100
- heterogeneous data, 41, 43, 64–65, 136–37, 142, 182, 207, 221
- high-energy photons, 221, 257

- highquality data, 19, 33, 62, 168,
170–71, 173, 217
- high-resolution technique, 143, 171,
204, 218, 244, 250
- hillfort, 246
- hoard, 39, 63
- holmium, 144, 150
- holography, 196
- homogeneity, 59, 64, 84
- Horizon 2020 programme, 4
- H-RTI image acquisition, 78–79, 85,
183, 237–39, 241
- humanities, 88, 138, 160, 165,
177–78, 182, 187–89, 232
- humidity, 123–24, 126, 255
- hypermedia, 211
- hyperspectral, 5, 73, 85, 110–11,
142–43, 146, 154, 156, 185,
217–19, 258
- hypertext, 211
- hypervideo, 211–12
- hypothesis, 12, 15, 22, 33, 68, 79,
103–4, 110, 178, 186
- icon, 109, 111, 113, 116, 118, 143–45,
148–49, 151–53, 161, 249
- iconography, 41–43, 63, 188
- identification, 4–5, 7, 15, 27, 36–37,
39–41, 54, 58, 62–64, 71, 75–78,
94, 101–2, 109, 129, 131, 142,
146, 148, 155, 157, 165, 173,
184, 186, 189, 217, 221–22, 224,
229–30, 249, 257–59
- ignorance of science, 11, 176, 182,
187–88, 190
- illumination, 20, 41, 46–47, 49–50,
72–73, 78–79, 99, 102, 113, 144,
146, 209, 217, 237–41, 250
- image, 8, 10–12, 14, 20–21, 23–27,
32, 36–37, 40–41, 44–47, 49–50,
63, 72–73, 78, 80–81, 83, 109–15,
143, 146, 148–49, 151, 155–57,
168–69, 177, 183–84, 190, 201,
203, 208–9, 212–13, 217–19,
225–32, 235, 237–40, 243,
249, 255
- image-based techniques, 20, 110, 201,
227, 234–35, 237
- imaging, 5, 8, 12–13, 36–37, 40, 50,
61, 64–65, 68, 72–73, 79, 82, 85,
110–11, 142–53, 155, 157, 169,
178, 181–83, 185–86, 201–3, 207,
217–19, 229, 235, 237–41, 258
- immersion, 88–89, 91–92, 95, 102–4
- impasto, 239
- imprecision, 5, 8, 189
- imprint, 42
- industry, 7, 126, 129, 173, 198, 217,
221, 248
- inference, 160, 162–64, 166–69,
171–73, 238
- information, 4, 6, 8–10, 18–31, 37,
40, 42, 51, 56, 61–63, 68–69, 71,
82–83, 88–89, 94, 99, 101, 103–4,
109–11, 115, 122–24, 127–30,
146–47, 160–61, 165–69, 172–73,
178–79, 185, 187, 190–91, 201–5,
209, 214, 217, 219, 222, 226, 228,
231–35, 246–47, 250, 255, 258
- infrared imaging, 72, 77, 142, 169,
217, 221, 248–49, 258
- infrastructure, 62
- InGaAs sensor, 113, 155
- ink, 118, 144
- inlaid marble, 12
- innovation, 4, 16, 68, 89, 178, 191,
254, 259
- inorganic elements, 169
- inscription, 41, 179, 237–40
- insect specimens, 123
- insight, 4–5, 11, 22, 40, 68, 83, 88,
157, 178, 181, 188, 241
- installation, 89–90, 130, 134, 235
- institutionalization, 180
- instrumentation, 6–9, 13–15, 36, 43,
57–61, 63–65, 124, 128–29, 131,
142, 144, 157, 164–73, 179, 186,
217, 222–23, 241, 248, 253–54,
257–59
- intangible cultural heritage, 10
- integration, 4, 8, 16, 37, 62, 83, 97,
148, 161, 164–65, 177, 180, 202,
204–5, 217–18, 223, 247, 253

- intellectual, 4, 138, 176, 182, 189–90
- intelligence, 16, 184
- intensity, 11, 149, 155, 226, 237–38, 258
- interaction, 21, 59, 62, 88–92, 94, 96–97, 99–104, 128, 160, 166, 177, 180, 185, 189, 209, 211–12, 237–39, 248, 257
- interdisciplinarity, 4, 9, 13, 16, 20, 36–37, 41, 61, 88, 115, 138, 160, 176–91, 228
- interface, 62, 89–90, 99, 160, 172
- interpretation, 5–6, 10–11, 16, 20, 22, 41, 43, 54–56, 61, 63, 115, 142, 160, 162, 177, 201, 219, 241, 255, 259
- investigation, 4, 14–15, 18, 36, 63–64, 68, 73, 85, 103, 137, 144, 184, 186, 202, 221–22, 239–40, 244, 259
- ionization, 221, 257–58
- iron, 58, 74, 246
- irradiation, 258
- isopropanol, 44–45
- iterative closest point algorithm, 136
- ivory, 146
- Jeddah, 204–5
- Jefferson, Thomas, 185
- kantharos, 18, 20–23, 30–33, 186, 199, 225, 229, 243, 247
- Karabournaki, 18–19, 21–23, 31, 33, 186
- kite aerial photography, 244, 246
- know-how, 62, 176, 179, 186
- knowledge, 4–5, 7, 9–10, 12, 16, 20, 22, 32, 40–42, 56, 61, 89, 93, 95, 97, 101, 108, 122, 129, 160–61, 163–66, 168–69, 176, 180, 182–85, 187, 189, 199–202, 205, 209, 213, 221, 226, 230, 237–40, 246–47, 254, 259
- Kraków, 39, 44, 62
- laboratory, 36, 43, 46, 61, 64, 124, 129, 143–44, 179, 186–87, 217–22, 227, 259
- lacunae, 12
- lake red pigment, 157
- Lambertian diffuser, 144, 226
- lamp, 73, 150, 239
- landscape, 96, 199–200, 227, 234, 244, 255
- laser, 14–15, 42–45, 49–50, 52–53, 64, 74, 89, 110, 122–24, 127–28, 133–36, 171, 173, 177, 179, 182, 196–205, 214, 221–24, 228, 231, 253
- Laser-induced Breakdown Spectroscopy, 221–24
- lathe technique for 3D reconstruction, 26, 29, 31
- layer, 58, 64, 74–75, 77–80, 85, 144, 156–57, 222, 224, 244, 258
- lead, 5, 9, 58, 74, 77, 79–80, 138, 144, 146, 156–57, 224, 258–59
- leaf, metallic decoration, 77, 85
- learning, 22, 90, 103, 110, 162, 180, 182, 184, 188, 190, 212
- leather, 118
- legibility of inscriptions, 156, 238–39
- lens, 23, 47, 50, 52–53, 72, 85, 112, 144, 148, 200, 213, 223, 227, 241
- Lidar, 136, 196, 198
- light, 12, 18, 23, 40, 42–45, 47, 50, 52–53, 65, 72, 76, 79, 85, 99, 110, 112–13, 123, 130, 136, 144, 146, 150, 160, 168, 171–73, 182, 195–96, 198, 200, 202, 209, 217, 219, 221, 223, 229, 237–39, 241, 247–50, 253
- limebased preparation layer, 79
- limitation of method, 9–10, 20, 29, 33, 49, 61, 111, 113, 131, 151, 166, 168, 177, 181, 189, 197, 217, 239, 259
- linguistics, 183–84
- linking of data, 56, 62, 99, 148, 161, 164, 188, 211–12
- lithic material, 10, 259

- lithography, 144
- lithopone, 75
- Livia, Drusilla, 89
- localization, 14–15, 62, 79, 133–34, 137, 186–87, 209, 223, 226, 244, 253, 255
- location, 6, 14, 21, 41, 43, 64, 69, 83, 89–90, 93, 97–99, 130, 134, 148, 180, 187, 200, 207, 209, 212, 223–24, 230, 237, 239, 241, 243, 254–55
- long-term care, 37, 122, 127–28, 134, 190, 217
- loss of information, 8, 11–12, 68, 71–72, 75, 108, 110, 122–23, 179, 183–84, 189, 198, 232, 250
- Macedonia, 22
- machine, 14–16, 63, 160, 162, 171, 200, 202
- macro-photogrammetry, 15, 47, 52–53, 75, 85, 213–14
- macroscale, 13
- magnesium, 58
- magnification, 38, 47, 49–50, 60, 79
- malachite, 146, 156
- management, 19, 22, 37, 68, 82–83, 85, 161, 164, 176, 197–98, 201, 235
- manganese, 58
- manufacturing, 5, 10, 14, 40, 52–53, 127, 142–43, 153, 190, 204
- manuscript, 109, 111, 113, 116, 118, 185
- mapping, 10, 12, 24, 33, 59, 76, 79, 96, 110, 183, 198, 226–27, 237, 244, 246, 253, 255
- marble, 12, 179, 202
- Margaret of Flanders, 68, 70–71
- marguerite, 69, 71
- maritime, 122, 124–27, 130, 135, 137, 254–55
- marker, 41, 47, 69, 71–72, 84, 104, 131, 202, 207–8, 241, 243
- marsh, 125
- masking, 112, 243
- matching, 11, 33, 71, 162, 203, 226, 230, 243
- material, 4–6, 9–11, 13–14, 16, 18, 26, 31–32, 36–37, 40, 42, 44–45, 58, 64, 68, 71–72, 76, 82, 95, 109–11, 115, 118, 123, 125, 127, 133, 142, 144, 146, 148–49, 155, 160, 164–66, 168, 170, 172, 177–83, 186–87, 197, 203, 209, 217, 221–22, 224, 244, 247, 257–59
- mathematics, 27, 127
- Matisse, Henri, xxxv
- measurement, 5–9, 12–15, 21, 24, 36–37, 42–43, 52–58, 61–65, 110, 122–24, 131, 134–37, 142–54, 166–68, 171, 177, 179, 181, 186–87, 190, 195, 198–202, 217, 219, 223–26, 229–30, 235, 243, 247–50, 253–58
- mechanics, 13, 44–45, 200, 203, 235
- mechanism, 29, 36, 160, 167, 169, 172, 240
- medallions, 42
- medieval, 40, 68, 71, 73, 78–79, 82, 85, 88, 92–99, 109, 111, 116, 126, 144, 186, 188, 209, 235
- Mediterranean, 228
- medium, 12, 101, 146–47, 171, 200, 250
- memory, 100, 253
- merchant ship, 124
- mercury, 150
- merging, 53–55, 115, 131, 213, 248
- mesh (3D surface representation), 26, 30–31, 33, 204, 226, 243, 250
- metadata, 51, 56, 62, 64–65, 68, 115, 137, 142, 161, 179
- metal, 37–38, 40, 42, 44–45, 60, 71, 75, 77–80, 85, 127–28, 130, 144, 151, 169, 186, 221–22, 246–47, 258–59
- metallurgy, 40, 42
- metalpoint drawing, 146, 156
- method, 4–9, 12–14, 19–20, 23, 32, 36–40, 43, 49, 51, 55, 60–65, 79, 81, 83, 88, 110, 115, 123–24,

- 127–30, 134–37, 143, 146, 149,
162, 176–78, 181, 183–87,
189–90, 195–98, 203, 211–13,
217, 225–26, 229, 237–39, 241,
243, 246, 258
- methodology, 18–20, 31–32, 41–43,
46, 64, 90–91, 100, 103, 122, 137,
142–43, 146, 157, 163, 179, 184,
201, 235, 253–54
- metope, 250
- metrology, 5–7, 13, 36, 51, 61–62,
186, 188, 203
- microanalysis, 12, 74–75, 258
- microscopy, 15, 37, 40, 43–45, 60,
74–77, 85, 111, 196, 214, 221
- micro-xrf, 58–59
- millstone, 13–15
- mint, 40, 42, 56, 61
- mirror, 200
- misalignment, 113, 153–55
- missing parts, 12, 23, 26, 31, 72, 97,
179, 183
- mobile systems, 104, 198, 201, 209,
225
- model, 7–8, 10–12, 14–15, 18, 20,
28, 32–33, 39, 44–45, 51–56, 60,
64, 88–92, 94–97, 99, 102, 104,
110–12, 127–28, 132–35, 138,
161, 163–64, 166, 169–70, 180,
183, 187, 191, 201–5, 213–14,
219, 225–30, 234–35, 237,
243–44, 246, 248, 258
- monitoring, 33, 36, 83, 85, 122–24,
127–29, 134–35, 138, 186–87,
235, 254–55
- monochrome, 115, 146, 249
- monogram, 177
- monument, 10, 88–90, 92, 196, 204–5,
209, 221, 239
- mordant, 79
- mordants, 78, 85
- morphology, 52, 55, 197, 244, 259
- mosque, 94, 99, 103
- Mostar, Holy Trinity Church, 90
- motif, 71, 224
- multidisciplinary, 4, 92, 177, 196
- multimedia, 19, 39, 62, 88–89, 203,
209, 212
- multimodal, 36, 41, 43, 64–65, 179
- multispectral, 110–11, 113, 115,
142–43, 146, 169, 178, 181, 186,
258
- multi-view, 225–28
- mural, 68, 71–72, 74, 78, 80, 85, 186,
224
- museology, 18, 22–23, 32–33, 36, 39
- museum, 10, 18–19, 21–22, 33,
36–42, 44–45, 47, 61–63, 65,
88–91, 94, 96–97, 101, 109–18,
122–37, 142–43, 161–62,
179–82, 186–87, 191, 203–4, 209,
212, 214, 229, 232, 235, 240, 244,
254, 259
- music, 92–103
- narration, 21, 89–90, 95, 97, 99, 101,
209, 211
- natural materials, 10, 44, 47, 84,
88–90, 93, 110, 123, 164, 186,
204
- nature, 42, 58, 64, 89, 115, 166,
169–70, 176, 184–85, 187, 189
- nave, 209
- navigation, 92, 102, 104, 198, 207
- nearinfrared radiation, 133, 217
- Neolithic, 118, 241
- Nevers, Countess of, 69–72, 78, 223
- nickel, 58
- nightlight, 133
- noise, 10, 152, 179, 243, 249, 254
- non-contact recording, 13, 142, 199,
203, 229, 235, 247, 255
- non-destructive analysis, 42, 257
- non-invasive techniques, 36, 42, 64,
72, 74, 83, 85, 122, 143, 181, 185
- normal, 12, 25, 27–28, 47, 203, 218
- Northumberland, 241
- Norway, 126
- numismatics, 36–40, 42–43, 52,
61–65, 186, 259

- objective, 15, 20, 33, 36, 43, 60, 101, 110, 128–29, 144, 161, 177, 180–81, 185
- observation, 12, 24, 44–45, 61, 72, 74–80, 85, 122, 148–49, 156, 184, 189, 195, 254, 257, 259
- obsidian, 259
- occlusion, 12, 133, 207, 209, 226–27
- ochre, 77–79
- Oldenburg, 132, 134
- Olympia, 209
- online access, 37, 40, 62, 89–90, 101, 176, 178–79, 185–86, 209, 227, 244, 246
- ontology, 16, 160–69
- operator, 6, 8–10, 16, 26, 30–31, 36, 72, 128, 132, 146–47, 177, 182, 200, 222, 231, 234, 241, 243, 253–54
- optics, 4, 7, 10, 36–37, 40–41, 43, 61, 75–77, 148, 166–68, 176–77, 180–82, 185–87, 189, 195, 199–200, 202–3, 219, 221, 223, 225, 230, 247, 250
- optimization, 28, 104, 110, 128, 160–61, 166, 173, 213, 226
- organic material, 125–27, 169
- Orthodox church, 109, 111, 116
- orthophotograph, 71–72, 83–84, 132, 225, 227–28
- Oslo, 126
- Ottawa, 177
- Ottoman period, 92, 94, 96, 98–99, 101
- oxidation, 44–45, 57, 77
- oxide, 75, 144, 150, 222
- Paestum, 250
- paint, 21, 25, 69, 74–75, 77–80, 82, 85, 118, 144, 146, 156–57, 162, 168–69, 238
- painting, 21, 68–85, 110, 143–45, 149, 155, 157, 164, 177, 186, 188, 190, 200, 214, 221–24, 235, 239, 258
- palace, 90, 109, 224, 255
- palaeolithic, 214
- palimpsest, 178–79
- panel, 112, 118, 143–46, 149, 155–57, 235, 238
- panoramic imaging, 14
- papal palace, 224
- paradata, xlv, 51, 62, 64–65
- parameter, 5, 9, 11, 26, 31, 37, 47, 49, 146, 150, 173, 200–201, 225, 230, 237–38, 258
- parchment, 118, 178
- Paris, 224, 232
- pattern, 5, 11–13, 18, 56, 69–71, 108–11, 129, 146, 149, 155, 161, 166, 188, 191, 199, 228, 247, 249–50
- penetration, 58–59, 64, 156, 168–69, 224, 258
- perception, 12, 88–89, 92, 101, 103, 176, 189–90, 238–39
- performance, 6–7, 10, 15, 24, 26, 28–29, 31, 44–45, 91, 97, 100, 111–13, 122, 142, 149–51, 169, 201, 217, 222, 227, 258
- perspective, 4, 9, 22, 115, 118, 180, 191
- petroglyphs, 214
- Phanagoria, 234
- phase-shift measurement, 199
- philology, 183–84
- photogrammetry, 8, 18, 20, 23, 43, 61, 64, 72, 82, 84, 97, 110–12, 122, 124, 128, 130, 132–34, 196, 201–2, 204–5, 214, 227–35, 243, 246, 255
- photography, 33, 37–39, 41, 61–64, 70, 72–76, 78, 80–85, 98, 112, 116, 123, 128–29, 184, 198, 218, 228–32, 238–39, 241, 243–44, 246
- photometry, 43–45, 49–50, 52–53, 64, 79, 196, 226
- photonics, 257
- photo-realistic 3D models, 31, 225, 227–28, 244
- photostacking, 43
- physics, 43, 129, 182, 188
- Picasso, Pablo, xxxv

- picture, 11, 33, 48, 72–73, 82–83, 99,
 109, 132–33, 155, 181, 208, 214,
 232
 pigment, 72, 110, 146, 152, 156,
 168–69, 221–22, 259
 Piraeus, 227
 plasma, 221, 223
 plaster, 69, 72–73, 80, 203–4
 point cloud, 14–15, 24–26, 82, 132–34,
 182–83, 188, 199–202, 225–26,
 230–31, 243–46, 250, 253–54
 Poitiers, 224
 pollen, 10
 polychromy, 144, 157, 224
 polyethylene, 118, 124, 126
 polygon, 204, 226, 243
 polymer, 144–45, 150, 152–53
 Polynomial Texture Mapping, 183, 237
 polytetrafluoroethylene, 144
 portability, 10, 58, 74–75, 112–13,
 118, 124, 146–48, 209, 219,
 222–23, 239, 259
 portrait, 41, 203
 Portsmouth, 124, 126
 post-processing, 15, 50, 112–13, 132,
 134, 229
 potsherds, 10, 14
 pottery, 18–21, 23, 25, 27, 29, 31, 33
 powder, 42, 44–45, 77
 precision, 5–10, 14–15, 42, 55, 95–96,
 110–12, 129, 134, 144, 157,
 170–71, 179–83, 189, 197, 207, 259
 Prehistory, 214, 241
 preservation, 14, 19, 21–22, 32–33,
 68, 80, 88, 108, 118, 125–26, 128,
 160, 177, 185, 190–91, 204, 225
 prevention, 21, 23, 122–24, 126, 130
 printing (3D), 19, 32, 118, 130, 144,
 203–4, 246
 production, 8, 13, 15, 18–21, 31, 33,
 40, 42–43, 56, 60, 62–64, 72–73,
 79, 97, 112, 129, 137, 200, 203–4,
 225–26, 230, 249, 253
 profession, 21, 23, 26, 61, 65, 92, 95, 97,
 101, 129, 143, 177, 179, 181, 184,
 186–87, 189–90, 202, 207, 225
 profile, 22, 26, 28, 31, 41, 57, 71, 73,
 79, 84, 128, 149, 155–56, 162,
 200
 projection, 8, 27, 89, 167, 199–200,
 208, 226, 247–50
 protection, 14–15, 71, 93
 provenance, 5, 14, 37, 61, 63, 161
 Prussian blue, 152
 pulsed laser beam, 198, 221, 223
 punch-marks, 56, 63
 pushbroom, 143, 146–47
 pycnometry, 44–45, 54

 qualitative, 100, 103, 115, 134,
 258–59
 quality, 5–6, 10, 18, 20, 32, 37, 44–45,
 62, 89, 96, 102, 110, 115, 135,
 142, 152, 164, 166–68, 170,
 172–73, 177, 181, 189–90, 200,
 218, 225, 247
 quantify, 18, 33, 61, 63, 79, 154, 223,
 258
 quantitative, 9, 55, 58, 85, 153, 219,
 258
 quantity, 6–10, 71
 questionnaire, 32, 101, 103, 164–65

 radiation, 8, 169, 178, 257–58
 raking light, 79, 239
 Raman spectroscopy, 224, 258
 realism, 26, 33, 49, 96, 207, 229
 reality, 68, 83, 89, 129, 203–4, 207–9
 realtime, 113, 134, 209, 218
 reassembly (virtual), 18, 20, 23, 26,
 179, 183
 recognition, 7, 11, 18, 33, 178, 182,
 185, 188, 203, 228, 231, 250
 recommendation, 123, 160, 162–63,
 166, 168, 173, 191, 204, 247
 reconstruction, 9, 11–12, 15, 18,
 20–27, 30–33, 40, 49, 79, 84,
 88–92, 94, 96–97, 99, 102–4,
 110–11, 122, 126–28, 153, 156,
 164, 183–84, 186, 198, 201, 209,
 212, 225–30, 232, 234–35, 240,
 243–44, 250

- reflectance, 40, 77, 79, 110–11, 115,
142, 144, 148–49, 151–54, 157,
167, 217, 237, 239, 241
- reflection, 12, 73, 134, 144, 149–50,
170, 188, 200, 237, 247–48
- reflectivity, 12, 44–45, 168
- refraction, 234
- registration, 83, 111, 113, 133, 137,
190, 201
- regression, 154
- reliability, 5, 61–62, 64–65, 142, 157,
164, 186
- relief of surface, 49, 64, 78, 230,
237–39
- relighting, 237
- Rembrandt van Rijn, xxxv, 177
- remedial conservation, 122–23
- remote, 19, 21, 33, 109, 199, 202,
204–5, 214, 218–19, 228, 232,
234–35, 241, 246, 255
- remote-controlled, 234, 241, 246
- rendering, 30, 60, 68, 79, 85, 96–97,
144, 183, 209, 213, 239
- renovation, 109, 122, 131, 135, 183
- repainting, 72, 75, 80
- repair, 179, 183
- repeatability, 6, 8–9, 12, 15, 44–45,
63, 70, 177, 184, 231, 239
- replica, 6, 18–19, 25–28, 33, 143, 145,
149, 155–57, 203–4
- representation, 4, 8, 10–12, 31, 33, 42,
56, 64, 78, 81, 84, 144, 160–61,
166–67, 172–73, 180, 183–85,
190, 207, 225–26, 230, 237, 239,
246
- reproduction, 6, 8, 70, 134, 143,
150–51, 157, 218, 246, 249
- requirements, 18–20, 32, 62, 65, 109,
112, 131, 164, 166–68, 170–72,
187, 196–97, 226, 254
- resection, 131, 254
- resolution, 5, 7–8, 13–15, 23, 26,
44–45, 47, 52–53, 55, 65, 73–75,
82, 85, 110–11, 113, 123, 133–34,
142, 148–49, 152–53, 155, 157,
165, 170–71, 179, 183, 190, 197,
204, 217–18, 227–28, 237, 244,
246–49
- resources, 16, 20, 33, 62, 122, 129,
138, 168, 178–79, 191, 197, 205,
212
- restoration, 19–22, 33, 42, 68–69,
108, 115, 118, 183, 187, 202–3,
205, 209, 221, 225–27, 235, 255
- ritual, 22, 33, 91
- river, 96, 122, 125–26, 138
- rock, 214, 235, 238, 241
- Roman, 10, 21, 36–43, 45, 47, 49, 51,
53, 55, 57, 59, 61, 63, 65, 89–90,
109, 186, 199, 212–14, 228–30,
237, 240, 243, 246–47, 257
- Rome, 40, 42–43, 57, 61, 89–90, 179,
212, 228
- roof, 14–15, 68, 134
- roughness, 7, 12–13, 15
- Round Robin Test, xxv, xxxvii, xl–xli,
141–44, 217, 219
- rugosity, 7
- rules, 10, 118, 162–73, 232
- Sagalassos, 227
- saint, 118, 224
- salts, 222
- salvage, 122, 126
- sample, 26–27, 42, 59, 63, 85, 126,
151, 169–70, 221–23, 240, 248,
257–59
- sampling, 24, 26, 110–11, 123,
145–49, 153, 157, 201, 203, 217,
222, 248, 250, 258
- Sarajevo, 88–103, 212
- scaffolding, 223
- scale, 5–7, 12, 15, 20, 47, 55, 61,
101–2, 104, 125, 149–50, 199,
201, 214, 229–30, 240–41, 244,
248, 250
- scaling, 63
- scanner, 8–10, 14–15, 23–24, 26,
28–29, 33, 37, 39–45, 49–50,
52–53, 61, 64–65, 77, 89, 110,
118, 122, 124, 127–28, 131,
133–36, 143, 146, 148, 171, 173,

- 177, 179, 182, 187, 196–205, 209,
214, 221, 228, 231–32, 247–50,
254, 258
- scholarship, 18, 40, 62, 90, 137,
177–79, 181–83, 185–91
- science, 5–6, 9–10, 15–16, 36–41,
43–44, 47, 55, 61–63, 65, 74, 88,
92, 101, 108–09, 122–24, 128–30,
132, 134–35, 160, 176–83,
185–91, 202–3, 205, 214, 217, 228,
232, 235, 244, 246, 255, 257–58
- scratches, 56
- screen, 8, 62, 89–90, 97, 134, 190, 240
- sculpture, 10, 42, 63, 214
- seal, 118
- semantics, 4, 16, 161, 163, 166, 168,
173, 180, 204
- sensing, 182, 195–98, 202, 204–5,
214, 218–19, 228, 232, 234–35,
246, 255
- sensitivity, 113, 155, 190, 222
- sensor, 23, 26, 89, 113, 146, 166, 169,
199–202, 207–8, 218, 248, 255
- sestertius, coin, 60
- settlement, 18, 21–22, 234, 246
- Seurat, Georges, 239
- Seville Principles, 11, 18, 31
- shading, 25, 80, 110, 196, 207, 209, 247
- sherd, 18–21, 23–31, 33
- ship, 122–24, 126–28, 130–31,
134–35, 137–38, 234, 240, 254
- shipwreck, 125–26, 234
- shipwright, 127
- significance, 10, 18, 20–22, 32, 38,
41, 49, 54, 60–61, 65, 68, 79, 82,
93–94, 109, 123, 125–26, 130,
138, 143, 152, 160, 162, 182–83,
198, 202–3, 209, 214, 219, 221,
227, 232, 239, 249–50, 254,
258–59
- silhouette, 99, 110, 196
- silicon, 58, 77, 218
- silk, 118
- silver, 36–37, 39–43, 45–47, 49, 51,
53–57, 59–61, 63, 65, 74–75, 77,
85, 224, 230, 258–59
- silver-copper, 259
- soil, 11–13, 219, 259
- solvent, 44–45
- sound, 81, 99, 211
- source, 9, 12, 18, 20, 31, 40, 42, 51, 95,
112–13, 134, 146, 150, 177, 184,
188, 201–2, 204–5, 221, 225–26,
232, 234–35, 237–38, 241, 246,
249, 257, 259
- space, 4, 20, 26, 28–29, 33, 36, 54, 72,
96, 113, 122, 124, 133, 142, 148,
160, 168, 176, 195, 197, 199–200,
226, 237, 243
- spatial, 4–12, 24–29, 43, 51, 64,
82–85, 96, 110–12, 118, 130,
142–49, 152, 155, 157, 160–67,
170, 177–87, 195, 202, 205, 214,
217–18, 228, 232–37, 244, 246,
248, 253, 255
- specialization, 5, 20, 33, 36–37, 62,
82, 123, 126, 168, 176, 178, 182,
184, 186–88, 190, 207
- specification, 7–8, 14, 36, 146–47, 201
- spectra, 4–5, 8, 10, 79, 82, 109–11,
113, 115, 118, 142–55, 157,
160–62, 164–67, 169, 177–82,
185, 196, 217–19, 223, 257
- Spectralon, 113
- spectro-colorimeter, 148, 150–52
- spectrometer, 8, 36–37, 41, 43, 56, 61,
74–75, 148, 223, 257–59
- spectrophotometer, 40, 43, 58, 79,
144, 150, 190, 217, 257–59
- spectroscopy, 43, 74, 77–78, 110,
142–43, 146, 148, 152, 217, 219,
221–24, 258
- spectrum, 8, 24, 47, 59, 77, 111, 144,
146, 196, 217, 223, 237, 248–49,
257
- specularity, 12, 40, 42, 49, 144, 151,
240–41
- spiral designs, 118
- spray, 42, 44–45, 247
- stability, 50, 80, 108, 144, 150, 191,
235, 241
- stakeholder, 15, 32, 108, 161, 177,
186, 188, 209

- standard, 6–9, 37, 40–41, 44–45, 51, 54, 62, 64, 112, 130–31, 142–45, 149–50, 152–54, 161–62, 164, 180–81, 187, 189–90, 200, 219, 227, 250, 255, 259
- Stanford, 179, 198, 202
- station (survey instrument), 122, 124, 131, 134, 199, 201, 253–55
- statue, 202, 232
- steel, 131, 144
- stereo, 43–45, 49–50, 52–53, 64, 110, 183, 196, 225–28, 248–49
- stereoscopy, 18, 20, 128, 177, 225–27, 230
- stilt house, 11
- Stockholm, 123, 126–27, 254
- stone, 14–15, 221, 246
- storage, 14, 18–19, 21, 39, 44–45, 68, 82, 125–26, 137, 199, 237, 253
- story, 88–92, 94–95, 97–104, 108, 211–12
- storytelling, 32, 88–91, 101, 103–4, 211–12
- Strasbourg, 224, 234
- strategy, 90, 93, 146, 160–61, 163, 165–67, 169, 171, 173, 180, 202
- stratigraphy, 74–75, 77–80, 85, 93–94, 222, 224, 244
- structure, 6, 11, 18, 20, 32, 42–45, 50, 52–53, 61, 64–65, 85, 91–92, 94, 100, 103, 110–12, 123, 126–27, 136, 157, 160–61, 163–65, 167, 169, 171, 173, 180, 182, 189, 196–98, 202, 205, 211, 213, 222, 226, 235, 238–40, 243, 245–50, 255
- stucco, 69, 72
- sulphate, 75, 77
- sunlight, 218, 247
- surface, 5, 7, 12–13, 15, 23, 26, 28, 33, 40, 42, 44–45, 49, 52–59, 64, 78–80, 85, 112, 126–27, 132, 144, 148, 150–51, 165, 167–70, 181, 196, 199–200, 202–4, 221–23, 225–30, 235, 237–39, 241, 243–44, 246–47, 250, 258–59
- surrogate, 10, 32, 63, 179, 186
- surroundings, 12, 22, 135, 137, 172, 195, 199
- surveillance, 122
- survey, 14, 52–53, 84–85, 101, 124, 126, 130–31, 133–34, 178, 181, 183, 185, 187, 199–201, 231, 233, 235, 241, 246, 253–55, 257
- sustainability, 31, 129, 179, 190–91
- symbiosis, 184
- symmetry, 26–29, 31
- synchrotron, 178, 258
- synthesis, 4, 16, 26, 31, 89, 207, 209
- tachymeter, 14–15, 124, 131, 133
- tactile, 12, 81
- tangible, 10, 128, 199
- target, 14, 18, 24, 101, 112–13, 130–31, 134, 143–44, 150, 200–201, 207, 227, 229, 253–55
- task, 4, 65, 110–11, 115, 128–29, 136, 142, 160, 162, 167, 180–81, 183, 207, 209, 250
- taxonomy, 163, 226, 244
- technology, 4–5, 10, 18–20, 31–32, 36–37, 40, 43–44, 52–53, 61, 63–65, 88, 90, 109–12, 115, 118, 123–24, 129–30, 143, 148, 160, 162, 164, 166, 168–69, 171–72, 176–82, 186–91, 195–96, 198–99, 203–4, 207, 211, 213, 217–19, 221, 225, 227, 229, 234, 237, 243, 247, 253–54, 257, 259
- teeth, 247
- tempera, 144, 146
- temperature, 81, 123–24, 255
- temple, 41, 179
- terminology, 4–7, 9–13, 15–16, 18–19, 22, 24, 123, 142, 161, 165–66, 168, 182–84, 189, 195, 230
- Terracotta, 246
- terrain, 95–96
- terrestrial, 200–201, 228, 234
- test, 12, 15, 24, 36–37, 41–43, 46–47, 52, 60, 63–65, 79, 81–84, 122, 124, 127–28, 131, 133, 136, 142–44, 185–86, 214, 217, 219, 238

- text, 21, 42, 63–64, 88, 97, 114, 167, 178, 198, 212
- texture, 5, 9, 11–15, 24, 33, 49, 79, 96, 110, 183, 196, 226, 237, 239, 250
- theodolite, 124, 134, 253
- theory, 6, 9, 12, 15, 44, 54, 129, 164–65, 182, 184, 188, 224
- thermography, 74, 80, 84–85, 228, 248
- Thessaloniki, 19
- thickness, 52, 54–55, 78, 144, 146, 258
- think, 4, 102, 104, 108
- thistle, 69, 71, 75–77, 79–80, 84–85, 183, 224
- Thrace, 22
- three-dimensional (3D), 5, 7–16, 18–20, 23–34, 36, 40–41, 43–46, 49–56, 60–65, 83–90, 92–97, 99, 100, 102, 109, 111–13, 124, 128–29, 131–37, 161, 164–73, 195, 197, 239, 253
- tile, 70–71, 84
- timbers, 122, 126–27
- timeofflight, 196, 198
- tin, 144, 156
- titanium, 74–75
- tomb, 89
- tomography, 186, 196
- tool, 23, 26, 28, 32–33, 42, 56, 83, 88, 90–91, 108–9, 113, 129, 135, 142, 160–62, 166–67, 176, 178, 181, 185, 190, 200, 202, 209, 211–12, 229, 244, 255, 257, 259
- toolkit, 42, 115, 198, 241
- topography, 12, 15, 195–96, 222, 239, 246
- topology, 52–53, 55
- touchscreen, 201
- traceability, 6, 58, 74, 77, 80, 85, 144
- tracking, 200, 209
- trade, 21, 42
- tradition, 10, 32, 42, 62, 72, 91, 115, 123, 128, 144, 162, 177, 187, 198–99, 219, 221, 241, 246, 255
- transdisciplinarity, 4, 16
- transformation, 4, 16, 40, 77, 79, 92, 136, 184, 198, 226, 237, 239, 241, 258
- transparency, 12, 31, 75, 156, 170, 177, 179, 183, 202, 247
- Transylvania, 118
- treatment, 37, 39, 42, 124–25, 127, 129, 138, 142, 169–70, 177, 187, 222
- triangulation, 53, 167, 171, 196–97, 199–200, 202–3, 230–31, 247, 250, 253
- tribrach, 201
- trigger, 23, 99, 102, 108, 115, 171, 223
- tungsten lamp, 238–39
- turntable, 23, 201
- Tuscany, 144
- typology, 5, 7–9, 11–12, 14–16, 19–21, 23, 32, 37, 41, 46–47, 52–53, 55, 63–64, 118, 122, 124, 130, 144, 150, 167, 172, 183, 218, 221, 229, 239, 250, 258
- UAV, 225, 228
- ultrasonic, 44–45
- ultraviolet, 144
- umber, 146
- uncertainty, 5–7, 9, 11, 14–15, 64, 95, 108, 165, 190
- underdrawing, 142, 155–56, 164, 168–69
- underlayer, 74–75, 77, 79–80
- underwater, 124–25, 234, 244
- unearthed, 18, 21, 234
- usage, 10, 167, 197, 209
- usefulness, 4, 12, 16, 18–19, 28, 32, 71, 137, 146, 151, 173, 188, 213, 218, 228–29, 254
- user needs, 108, 129
- vacuum, 54
- validation, 26, 56, 177, 184, 188
- valley, 93, 149, 156, 232, 234
- Valois, 68
- variability, 4–6, 8, 12, 16, 20, 24, 26, 36, 41, 47, 56, 61–62, 65, 68, 78–79, 82, 111, 126, 138, 142, 144, 153, 157, 180–84, 186, 197, 200, 217–18, 226, 237, 239, 250, 253

- Vasa, 123, 126–27, 254–55
 VASARI project, 143
 vase, 18–23, 31–33, 109, 111–12, 183, 186
 Vatican, 89
 Venus of Frasassi, 214
 verification, 7, 9, 150, 169, 227, 259
 vermilion, 146
 vertex, 12, 25–28, 33, 53
 Vespasian, emperor, 57
 vessel, 18, 21–23, 26–27, 29, 31–33, 118
 Vesta, goddess, 41
 video, 38, 198, 207, 211–12, 218, 225, 228
 Vienna, 39, 202
 viewer, 12, 40, 62, 83, 115, 135, 170, 211, 237–40
 viewpoint, 14, 24, 30, 32, 201, 226–28, 230, 243
 villa, 89
 Virgin, 118
 virtual, 12, 18–21, 23, 25–27, 29–31, 33, 63, 83–84, 88–97, 99–101, 103–4, 109, 115, 135, 179, 183, 186, 198, 200, 203–4, 207, 209, 211–12, 232, 234, 237–39, 250
 visibility, 14, 24, 60, 62–63, 69, 71, 73, 75–76, 79, 95, 111, 113, 142–43, 188, 204, 217, 226, 234, 239, 248
 vision, 11–12, 18, 31, 33, 37, 41, 47, 51, 61–62, 74–75, 77, 80, 88, 92, 97, 115, 135, 149, 151, 155–56, 167, 183–84, 190–91, 196, 207, 225–28, 230, 235, 237–38, 246, 253–54
 visitor, 21, 39, 65, 68–69, 83–84, 88–91, 96, 101, 109, 122–23, 128, 130, 135, 185–87, 209
 visualisation, 14, 18, 20, 25–26, 30–33, 37, 43, 49, 60–63, 77, 79, 82–85, 92, 109, 113, 115–16, 118, 122–24, 134–35, 137, 154–56, 164, 168, 178, 180–81, 186, 201–3, 207, 209, 229, 237, 239, 243, 254, 257
 V-MusT project, 89, 179
 vocabulary, 16, 37, 138, 142, 164–65
 volumetric, 20, 137, 229
 wall, 68–73, 75, 77, 79–85, 92–94, 126, 186, 188, 221–23
 walnut oil, 78–79
 warship, 126–27
 Washington, 143
 water, 42, 44–45, 126–27, 204, 234
 watercolour, 144, 155–56
 waterlogged, 125–27, 169–70, 173, 187
 waterwheel, 14
 Watt, James, 203–4
 wavelength, 8, 73–74, 110–11, 113–15, 142–56, 169, 217, 248, 250, 258
 waviness, 7, 12–13
 website, 31, 33, 51, 100–101, 124, 202, 212, 248
 weight, 6, 54, 60, 127, 241, 258
 Westminster, 235
 white, 23–24, 44–49, 69, 71, 73–80, 84, 88–103, 112–13, 130, 143–46, 152, 157, 199, 211, 229, 247, 249
 wood, 118, 124–26, 133–34, 144, 169–70, 173, 187, 234–35, 244, 254–55
 workflow, 5, 46, 84, 92, 143, 164, 243, 253
 workpiece, 12
 workshop, 13–16, 21–22, 69, 203, 232
 xenon, 150
 x-ray, 37, 39–40, 43, 59, 74, 178, 221, 224, 257–59
 yellow, 74–75, 77, 79–80
 zinc, 74–75
 zoom lens, 72, 154, 196
 z-stacking, 213
 Zurich, 232, 234

