

# Index

- 3D, 170, 178, 261, 273, 275, 278–280, 283, 285, 287, 292–293, 297
- A/B testing. *See* bucket testing
- abraham lincoln, 110, 114
- abstracts. *See* summaries
- adaptive filtering, 216, 226
- Adobe Labs*, 132
- ads, xv
- Aduna, 269, 280
- advertisements, xv, 28, 135, 158
- advice seeking queries, 84
- aesthetics, 26–28, 45–46
- agileviews, 164, 171
- alerts, 214–215, 221–222, 224–225, 231–232
- Alice's Adventures in Wonderland*, 286, 300
- AltaVista, 17, 53, 84, 85, 112, 117, 141, 146, 147
- Amazon, 44, 131, 136, 220, 231
- ambiguous queries, 87, 134, 141, 150, 156, 204, 209, 214, 220
- AMIT, 185, 193
- Amway, 96
- analysis. *See* sensemaking
- analytical tasks, 235, 245
- anchoring, 79, 142, 147
- AND-based ranking, *see* conjunction-based queries
- animation, 238, 248
- answer types, 98, 101
- AOL, 110, 114
- Apple, 300, 302, 305, 316, 319, 322, 323, 341
- apple, 177, 185
- Aquanet, 169, 177
- Ariadne, 165, 173
- art history collection, 190–193, 199–201
- Ask, 12, 95, 97, 105, 109
- audio collections, 313, 330
- audio search, 312–313, 329–332
- auto-suggest. *See* dynamic term suggestions
- Autofocus, 269, 280
- automobile data collection, 239–240, 249–251
- baby naming, 293, 307
- bandwidth, 297, 313
- bar charts, 234, 244, 258, 273
- BEAD, 273, 287
- Berkeley, 21
- berry-picking, 67–69
- BETA, 283, 297
- between-participants design, 41, 51
- bibliographic systems, 4, 92, 94, 107, 112, 159–160, 165–167, 173, 190, 199
- big dog, 110, 114
- bike, 182, 190
- Bill, 277, 290
- bioscience collection, 16, 19, 148, 154, 161, 186, 194, 207, 217
- BioText, 10, 148, 154, 267
- Blackberry, 23, 300, 316
- blackberry, 23
- blended results, 134, 141, 315, 333
- blind relevance feedback, 153, 160
- Blinkx, 316, 334
- blogs, 323, 341
- bookmarks, 158, 164
- Boolean syntax, 3, 4, 72, 99–103, 107–114, 119, 163, 170, 275, 288
- + operator, 112, 117
- “all the words”, 111, 116
- “any of the words”, 111, 116
- adjacency operator, 108, 112

- Boolean syntax (*Cont.*)  
 conjunction operator, 108, 112  
 difficulties of, 3, 108–109, 112–113  
 disjunction operator, 108, 112  
 double-quote operator, 110, 114  
 faceted queries, 111, 115  
 filters, 111, 116  
 form-based interfaces, 111, 116  
 mandatory operator, 112, 117  
 morphological analysis, 110, 114  
 NEAR operator, 110, 114  
 post-coordinate queries, 110, 114  
 query term proximity, 110, 114  
 question mark operator, 108, 112  
 visualizations, 247–251, 258–262  
 Web forms, 111, 116  
 wildcard operators, 109, 114
- breadcrumbs, 19, 163–164, 170–171, 193,  
 196, 203, 205
- browsing. *See* navigation
- brushing and linking, 238, 247, 286, 300
- bucket testing, 49–52
- camera price, 24
- card sorting, 25
- cards, 165, 173
- Cat-a-Cone, 273, 285
- categories, 20, 75, 77, 174–198, 208, 224–225,  
 234–235  
   faceted, 21, 174, 182, 188–196, 205,  
   208–210, 217–221, 267–273, 279–285  
   flat, 21, 174–190  
   hierarchical, 21, 174, 182, 187–188,  
   195–196, 224, 234, 247, 256
- cats, 207, 217
- cats dogs fish mice, 110, 115
- Cha-Cha, 54, 185, 193
- ChaCha, 302, 318, 322, 340
- charge for use, 4
- checkboxes, 149, 154
- Chickenfoot, 322, 341
- child searchers, 59, 95, 97, 270, 283
- Chrome, 19, 104, 106, 129, 134, 158, 164, 252,  
 263
- chronological order, 245, 253
- chronological ordering, 16, 47, 109, 113, 136,  
 141
- citation analysis, 129, 134, 294–296, 309–311
- clavical surgery, 16
- click logs. *See* clickthrough; query logs
- clickthrough, 87, 133, 139, 225–228, 235–238,  
 318, 336
- clickthrough inversion, 122, 126
- clustering, 175, 183, 199–210, 221, 273–278,  
 285–292  
   monothetic, 200, 203–206, 210, 214–217  
   polythetic, 200–203, 210–213
- Clusty, 207, 217
- Co-op, 159, 165, 177, 184, 208, 218
- cognitive abilities, 57, 235, 245
- collaborative filtering, 218–221, 229–231
- collaborative search, 318–321, 336–339
- collection characteristics, 4, 158, 165
- collections  
   art history, 190, 199  
   audio, 313, 330  
   bioscience, 16, 19, 148, 154, 161, 186, 194,  
   207, 217  
   Cranfield, 61  
   email, 11, 136, 141, 181, 188, 230, 240  
   images, 190, 199, 307, 324  
   news, 4, 228, 238  
   personal information, 181, 188  
   sports collections, 175, 183  
   TREC, 31  
   video, 310, 327
- color coding, 237, 247, 263, 274, 284, 298
- color highlighting, 9, 129, 134, 252, 263
- command languages, 4, 91, 94, 114–124,  
 322–323, 340–341  
   difficulties of, 3  
   sequences of queries, 115, 120  
   shortcuts, 117, 122  
   Web forms, 116, 122
- concordances, 286–288, 300–303
- conjunction-based queries, 16, 93–94, 96–97
- controlled experiments. *See* formal usability  
 studies
- cooperative search. *See* collaborative search
- cost structure analysis. *See* foraging theory
- cover flow, 139, 144
- Cranfield collection, 61
- crowdsourcing, 44
- curation, 158, 165
- customization, 213, 224
- Data Mountain, 170, 178
- database systems, xv, 95, 98, 112, 118
- DCG. *See* discounted cumulative gain
- deep links. *See* sitelinks
- DeepDyve, 99, 102
- Delicious, 218, 228, 317, 335
- dependent variables, 40
- design guidelines, 6–28  
   aesthetics, 26–28  
   balance user control, 14–18  
   feedback, 7–14  
   reduce errors, 23–25  
   reduce memory load, 18–21  
   shortcuts, 22–23

- small details, 25–26
    - transparency, 14–18, 101, 103
  - design process, 5–6
    - iterative design, 6
    - needs assessment, 6
    - task analysis, 6
  - design space, 6
  - Dewey Decimal System, 190, 199
  - Dialog, 108, 112, 115, 120, 163, 170
  - dialogue interfaces, 162, 169, 323, 341
  - Digg, 218, 228, 317, 335
  - digital libraries, 165, 173, 270, 283
  - directories, 158, 165, 178, 186, 187, 195
  - discount usability testing, 6, 34
  - discounted cumulative gain, 34
  - distortion-based techniques, 238, 248
  - diversity, 87, 132, 134, 137, 141
  - DLITE, 165–168, 173–176
  - Docuburst, 288, 303
  - document summaries. *See* summaries
  - document surrogates. *See* surrogates
  - DOE OSTI, 11
  - Dogpile, 85, 93, 95, 150, 156
  - dogs and cats, 108, 113
  - drop-down menus, 11, 19, 101, 111, 158, 163, 189, 269
  - Dynacat, 186, 194
  - dynamic term suggestions, 12, 105–112, 300, 317
  
  - e-commerce sites, 214, 224
  - eBay, 105, 109, 110, 115, 181, 188
    - eBay Express, 195–196, 204–205
  - ecological validity, 46
  - economic vs. exhaustive scanning, 139, 144
  - effectiveness, 5, 30
  - efficiency, 5, 30
  - elderly searchers, 2
  - Ella Fitzgerald, 196, 205
  - email collections, 11, 136, 141, 181, 188, 230, 240
  - empty results, 24, 113, 118, 167, 174, 189, 197
  - Enso, 322, 341
  - entry forms, 91, 94, 101–104, 108
    - color, 103, 106
    - faceted queries, 111, 116
    - grayed-out instructions, 18, 21, 103, 106
    - hints, 103, 106
    - length, 101–104
    - size, 103, 106
    - wording, 103, 104
  - ERIC, 111, 116
  - ESPN, 175, 183
  - ESPN, 213, 224
  - evaluation, 29–63
    - experiment design, 40–43
    - guidelines, 52–63
      - encourage participant motivation, 53–54
    - experimenter bias, 53
    - experts, 57
    - individual differences, 54–57
    - novices, 57
    - participants' cognitive abilities, 57
    - participants' knowledge, 55
    - participants' search experience, 56
    - strong baseline, 62
    - task differences, 57–60
    - test collections, 60–61
    - timing, 61–62
  - informal usability testing, 34–36
  - number of participants, 36
  - number of tasks, 36
  - query and task bias, 60
  - query logs, 47–52
  - query variability, 59
  - questionnaires, 44–45
  - standard IR evaluation, 30–34
  - task variability, 58–59
- experiment design, 40–43
- expert searchers, 5, 57, 82, 95, 98, 114, 115, 119, 120
- extracts. *See* summaries
- eye movement, 236, 246, 312, 329
- eye tracking, 37, 136–139, 141–144, 315, 333
- 
- F-measure, 32
- faceted navigation, 188–196, 205, 208–210, 217–221, 267–273, 279–285, 305, 323
- faceted queries, 111, 115
- fact finding, 89
- FAQ Finder, 97, 99
- Fathumb, 271, 284, 305, 323
- FeatureLens, 282, 295
- field studies, 36
- filter-flow model, 249, 260
- filtering, 180–182, 188–190, 214, 216, 225, 226
- Findex, 203–205, 214–216
- Firefox, 129, 134
- fish-eye views, 130, 135, 238, 248, 254, 265
- Flamenco, 54, 189–195, 197–204, 267, 280
- Flickr, 316, 333
- focus-plus-context, 183, 191
- foraging theory, 73–74
  - information consumption, 74
  - information patches, 74, 76
  - information scent, 76–77
- ForkBrowser, 312

- Forkbrowser, 329  
 formal usability studies, 36–46  
   aesthetics, 45–46  
   balancing condition order, 39–43  
   between-participants design, 41  
   blocking, 40  
   consent forms, 37  
   dependent variables, 40  
   experiment design, 40–43  
   hypotheses, 40  
   independent variables, 40  
   Latin Square, 41–43  
   learning effects, 39  
   pilot testing, 39  
   remote usability testing, 39  
   within-participants design, 41  
 FreeBase, 323, 341  
 full-sentence queries. *See* natural language queries  
 full text, 4, 92, 94, 98, 101  
 Furl, 218, 228, 317, 335
- Galaxy of News, 273, 287  
 geographic information, 323, 341  
 Gestalt principles, 237, 247  
 giants, 179, 187  
 golden parachute, 96  
 Google, 1, 16, 17, 23, 26, 28, 110, 114, 118,  
   123, 124, 130, 131, 136, 159, 165, 177,  
   184, 208, 214, 218, 228, 238, 299, 300,  
   314, 317, 318, 322, 336, 340  
 Google Alerts, 215, 225  
 Google Answers, 322, 340  
 Google toolbar, 129, 134  
 Greco-Latin Square. *See* Latin Square  
 greyed-out text, 18  
 Grokker, 277, 291  
 Grouper, 205, 216  
 grouping, 177–180, 185–188  
 guided navigation, 189, 197  
 gulf of evaluation/execution, 67  
 gutters, 286, 300
- Hakia, 134, 141  
 Halloween, 97  
 harry potter, 142, 148  
 HCI, 5  
 heuristic evaluation, 36  
 HIBROWSE, 270, 283  
 high-fidelity design, 35  
 highlighting, 124, 128–130, 134–135, 183,  
   192, 237, 238, 246, 247, 252–261,  
   263–274  
   boldface, 128, 134  
   color highlighting, 128, 134, 258, 270  
   query terms, 9, 254, 265  
   reverse video, 128, 134, 183, 192  
 history. *See* search history  
 hits, 120, 126  
 how to prevent cheese from  
   molding, 123, 130  
 human question answering, 321–322,  
   339–340  
 Human–Computer Interaction, 5  
 Hunter Gatherer, 170, 177  
 hyperbolic tree browser, 247, 256  
 hyperlinks, 23, 72, 75, 77, 79, 133, 139, 149,  
   151, 154, 158, 165, 252, 263, 267, 280
- IBM, 282, 283, 295, 297  
 iBoogie, 207, 217  
 icons, 131, 137, 241, 253, 284, 286, 298,  
   300  
 image collections, 307, 324  
 image search, 307–309, 324–326  
 immediate accuracy, 34  
 incremental search. *See* dynamic term  
   suggestions  
 independent variables, 40  
 Infocrystal, 263, 269, 274, 280  
 Infogrid, 164, 172  
 informal usability testing, 34–36  
 information architecture, 76  
 information canvas, 170, 177  
 information foraging theory. *See* foraging  
   theory  
 information gathering, 89  
 information needs, 65, 82–91, 94, 123,  
   130  
 information quality, 158, 165  
 information scent, 76–77  
 information seeking, 64–90  
 information structure, 76  
 Information Visualizer, 170, 178  
 informational queries, 84, 137, 144  
 Infoseek, 1  
 InfoSky, 273, 276, 287, 289  
 Inky, 322, 341  
 instant answers, 300, 317  
 Insyder, 258–261, 270–273  
 intellectual property concerns, 124, 130  
 intelligence analysts, 80–82, 283–286,  
   297–300  
 intermediaries. *See* librarians  
 Internet Archive, 316, 334  
 Internet Scrapbook, 170, 177  
 iPhone, 300, 306, 316, 323  
 iPod, 305, 323  
 ipod, 97  
 iterative design, 6

- Japan, 192, 200  
 jets, 134, 141, 150, 156  
 Jigsaw, 282, 296  
 Joe McCarthy, 158, 165  
 journalists, 4, 180, 187
- kayaking, 188, 196  
 key frames, 310, 327  
 keyword queries, 1, 2, 20, 24, 91–95, 98, 112, 117, 192, 201  
 keyword removal, 13, 217, 228  
 keyword-in-context. *See* KWIC  
 kittens, 134, 141  
 Kohonen's feature maps, 273, 276–277, 287, 289–291  
 Korean search, 321, 340  
 KWIC, 122–130, 135, 286, 300
- lab study. *See* formal usability studies  
 laboratory. *See* usability testing  
 labrador retrievers, 132, 137  
 labs, 132, 137  
 large-scale log-based usability testing.  
   *See* bucket testing  
 Latent Semantic Indexing, 275, 287  
 Latin Square, 41–43  
 lattice views, 263, 275  
 legal cases, 4, 168, 176  
 LexisNexis, 160, 167  
 librarians, 4, 158, 165, 190, 199, 278, 292, 317, 334  
 Likert scales, 44–45  
 line graphs, 234, 244  
 literature analysis, 286, 294–296, 300, 309–311  
 long queries, 80, 97, 100, 322, 340  
 longitudinal studies, 46–47, 182, 190, 205, 216, 232, 241  
 low-fi design, 34–35  
 low-fidelity prototypes. *See* low-fi design  
 LSI. *See* Latent Semantic Indexing  
 Lyberworld, 261, 273
- machine learning, 128, 133, 216, 226  
 Madagascar, 4  
 magic lenses, 250, 261  
 Mahalo, 159, 165  
 mandatory operator, 112, 117  
 Many Eyes, 289  
 MAP score, 32  
 Marilyn Monroe, 96  
 Markov models, 223, 233  
 MatchBars, 257, 269  
 mean average precision. *See* MAP score  
 media players, 310, 327
- MediaMill, 312, 329  
 mental models, 66  
 meta-analysis, 235, 244  
 metadata, 4, 120, 126, 177, 185, 189, 197, 317, 334  
 Metaweb, 323, 341  
 Microsoft, 17, 28, 97, 100, 104, 108, 134, 141, 150, 156, 170, 177, 302, 316, 318, 333, 336  
 misspellings. *See* spelling  
   corrections/suggestions  
 mobile search, 297–306, 313–323  
*Moby Dick*, 92, 94  
 models of search  
   anchoring, 79  
   berry-picking, 67–69  
   browsing, 74–76  
   cognitive model, 66–67  
   cost structure analysis, 73–74  
   dynamic model, 67–69  
   emotional response, 69  
   foraging theory, 73–74  
   gulf of evaluation/execution, 67  
   incremental feedback, 77  
   information scent, 76–77  
   information seeking cycle, 65  
   mental models, 66  
   monitoring, 72  
   navigability proposition, 76  
   Norman's model, 66–67  
   orienteeing, 77–80  
   recognition over recall, 74  
   seeking in stages, 69–71  
   sensemaking, 66, 80–82, 168–173, 176–179  
   standard model, 64–66  
   stop conditions, 72  
   strategies, 65, 71–80  
   tactics, 71–73  
   teleporting, 79  
   thrashing, 79  
   triggers, 72  
 monitoring, 72  
 more like this. *See* related articles  
 morphological analysis, 17, 99–103  
 motivation, 53–54  
 MovieLens, 219, 230  
 MSN/Foxsports, 175, 183  
 mSpace, 270, 283  
 MTurk, 44  
 multilingual search, 323, 341  
 multimedia search, 91, 94, 135, 141, 306–317, 323–334  
   audio search, 312–313, 329–332  
   image search, 307–309, 324–326  
   video search, 310–312, 326–329

- multi-person search. *See* collaborative search
- Murax, 96, 99
- MyWeb, 218, 228, 318, 336
- MyYahoo, 213, 224
  
- NAFTA, 189, 197
- Name Voyager, 293, 307
- narrowing, 175–177, 183–185
- narwhales, 92, 94
- natural language queries, 91, 94–95, 97–98, 322–323, 340–341
- navigability proposition, 76
- navigation, 20–21, 74–76, 89, 91, 94, 174–210, 221, 305, 323
- navigation paths, 223, 233
- navigation structure, 20, 75, 76, 210, 221
- navigational queries, 84, 137, 144
- needs assessment, 6
- network views. *See* nodes-and-links views
- New York Times*, 18, 289, 305
- news collection, 4, 228, 238
- NFL depression concessions, 95, 98
- nodes-and-links views, 245, 253, 278, 282, 292, 294, 296, 308
- Nokia, 302, 318
- nominal data types, 239–247, 249, 251–256, 293, 306
- non-sensical graph, 241, 252
- novice searchers, 3, 57, 82, 94–95, 97–98, 209, 220
- null results. *See* empty results
  
- Obama, 288
- Obama, 139, 144
- ODP. *See* Open Directory Project
- older search systems, 3–5, 9, 107, 112, 115, 120
- Omnifind Analytics, 282, 295
- OneNote, 170, 177
- OneSearch, 300, 317
- Open Directory Project, 86, 180, 187, 195, 224, 234
- ordinal data types, 239, 249
- organic results, 135
- orienteering, 77–80
- osteoporosis, 256, 268
- overviews, 130, 135, 164, 171, 254, 261, 265, 273
  
- PageRank, 16, 224, 234
  - topic-based, 224, 234
- Pagis Pro, 257, 269
- panning, 238, 247
  
- paper prototypes. *See* low-fi design
- paragraph-length queries, 15, 98–99, 101–102
- paralegals, 4
- parallel flights. *See* bucket testing
- parametric search, 189, 197
- participants, 34, 43–44
  - recruiting, 43–44
- perceptual system, 234, 244
- peripheral views, 164, 171
- personal information, 181, 188, 229–232, 239–241, 299, 314
- personalization, 211–233, 243, 318, 336
  - combined explicit and implicit, 229–231, 239–240
  - explicit methods, 213–221, 224–231
  - implicit methods, 221–229, 231–239
- Phlat, 104, 108, 181–182, 188–190
- phonesthesia, 293, 307
- pie charts, 258, 270
- ping pong, 300, 317
- pizza, 300, 317
- podcasts, 307, 313, 323, 330
- Podscope, 317, 334
- popular destination suggestions, 151–152, 157–159
- popularity measure, 16
- pornography queries, 85, 299, 314
- post-coordinate queries, 110, 114
- Powerset, 97, 100, 306, 323
- preattentiveness, 236, 246
- precision, 9, 16, 32
  - alternative measures, 34
  - average precision, 32
  - immediate accuracy, 34
  - MAP score, 32
  - precision-at-k, 32
- Prelinger, 316, 334
- previews, 21, 24, 131, 137, 164, 171
- Prisma, 145–147, 151–153
- productivity of language. *See* vocabulary problem
- profiles, 214–217, 224–228, 236–238
- Protofoil, 164, 172
- prototyping, 6
- proximity of query terms, 9, 94, 97, 101, 103, 128, 134, 237, 247, 254, 266
- proximity of terms, 16
- pseudo-relevance feedback, 153, 160
- PubMed, 19, 154, 161, 163, 170
  
- qualified search speed, 62
- quantitative data types, 239, 245, 249, 253
- query box length. *See* entry forms

- query classification
  - automated, 85–86
  - manual, 83–85, 88–90
- query history, 19
- query intent, 83–88
- query length, 93, 95
- query logs, 47–52, 83–88, 120–122, 126–128, 141, 145–147, 150–151, 153, 156–158, 221–222, 225–229, 231–232, 235–239
  - bucket testing, 49–52
  - session boundaries, 48–49
  - user identity, 49
- query operators, 107–114, 119
- query previews, 21, 24, 192, 200
- query reformulation. *See* reformulation
- query specification, 65, 91–119, 125, 247–252, 258–263
- query taxonomies, 83–86
  - advice seeking queries, 84
  - ambiguous queries, 87
  - browsing, 89
  - fact finding, 89
  - information gathering, 89
  - informational queries, 84
  - mobile queries, 300, 315
  - navigational queries, 84
  - pornography queries, 85
  - resource queries, 84
  - topical queries, 85
  - transactional queries, 84
  - transactions, 89
- query term expansions. *See* query term suggestions
- query term highlighting. *See* highlighting
- query term suggestions, 11, 71, 144–151, 157, 177, 185, 252, 263
- query terms, 252–261, 263–273
- query transformations, 16–18, 99, 102
- query-oriented summaries, 122–130, 135
  - fragments vs. sentences, 127–128, 133
  - highlighting, 128–130, 134–135
  - sentence selection, 125, 130
  - summary length, 125–127, 131–132
- question answering, 95–98, 101, 321–322, 339–340
- questionnaires, 44–45
- Quicksilver, 322, 341
- quorum-level ranking, 110, 114
  
- rabbit, 286, 300
- rainbow, 315, 333
- Rapid Serial Visual Presentation, 312, 329
- re-access. *See* revisitation
- re-ranking, 225–228, 235–238
- Read Wear/Edit Wear, 129, 134, 252, 263
  
- real-time query expansion, 106, 110
- recall, 32, 93, 96, 98, 101
- recognition over recall, 20, 74
- recommender systems, 217–221, 228–231, 317, 335
  - content-based, 214, 220, 225, 230
  - item-based, 220, 230
  - user-similarity-based, 218, 229
- reformulation, 72, 104, 108, 136, 141–156, 216, 226
- related articles, 154–155, 161–163
- RelationBrowser++, 269, 283
- relevance, 31–32, 128, 131, 134, 137
  - judgements, 31, 34
  - non-binary judgements, 34
  - relevance judgements, 215–216, 222, 225–226, 232
  - relevance scores shown graphically, 131, 137
- relevance feedback, 152–154, 159–161, 215, 222, 225, 232, 310, 318, 327, 336
  - pseudo-relevance feedback, 153, 160
- remote usability testing, 39
- resource queries, 84
- response variables. *See* dependent variables
- results diversity. *See* diversity
- results evaluation. *See* search results presentations
- results listings. *See* search results presentations
- retinal variables, 237, 247
- retrieval results. *See* search results presentations
- revisitation, 19, 87, 158, 164, 231, 241
- routing, 214, 225
- RSVP, 312, 329
  
- Safari, 302, 319
- Sally Ride, 107, 112
- Sandbox, 170–173, 178–179
- satisfaction, 5, 30
- scanning, 139, 144, 236, 246, 263, 264, 275, 276, 312, 315, 329, 333
- scatter plots, 258, 273, 275, 279, 287, 292
- Scatter/Gather, 200–203, 210–213, 275, 287
- screen size, 297, 302, 313, 319
- scrollbars, 129, 134, 252, 263
- scrolling, 304, 321
  - endless scroll, 316, 333
- search engine optimization, xv
- search history, 19, 158, 162–164, 170–171, 222–225, 232–235
- search hits. *See* search results presentations
- search process interfaces, 164–168, 171–176

- search results ordering effects, 135–139, 141–144
- search results presentations, 8–11, 120–140, 146, 302–306, 319–323
- search within, 18
- SearchMe, 139, 144, 267, 278
- SearchMobil, 303
- SearchWiki, 318, 336
- SeeSoft, 288, 289, 301, 305
- sensemaking, 66, 80–82, 168–173, 176–179, 286, 300
- SEO, xv
- SERP. *See* search results presentations
- server logs. *See* query logs
- sessions, 48–49, 151, 158, 222–224, 232–234
  - session boundaries, 48–49
  - session trails, 151, 158
- shortcuts, 117, 122, 133, 139
- shots, 310, 327
- sitelinks, 23, 133, 139
- SketchTrieve, 170, 178
- SMS, 300, 317
- Snap, 131, 137
- Snap Shot, 131
- Snapshot, 137
- snippets. *See* summaries
- social bookmarking, 196–198, 205–208, 218, 228, 317, 335
- social ranking, 317–318, 334–336
- social search, 317–322, 334–340
- social tagging, 196–198, 205–208, 316, 317, 333, 335
  - tag clouds, 289, 304
- sortable column views, 11, 181, 188, 258, 270
- sorting, 180–182, 188–190
  - sortable columns, 11, 181, 188, 258, 270
  - stable sorting, 181, 188
- source selection, 157, 159, 164, 165
- Sparkler, 263, 274
- sparklines, 238, 249, 261, 273
- spatial position, 237, 240, 247, 251
- speech. *See* spoken queries
- spelling corrections/suggestions, 11, 18, 24, 142–144, 148–150
- split testing. *See* bucket testing
- spoken queries, 302, 307, 313, 318, 324, 330
- sports sites, 175, 183
- standing queries, 214, 225
- starfields, 273, 285
- starting points, 157–162, 164–169
- State of the Union Address*, 289, 305
- statistical data, 160, 167
- statistical ranking, 15, 93, 96, 99, 101, 107, 112
- stemming
  - seemorphological analysis, 17
- Steve Jobs, 97
- stopwords, 17, 99–103
- Stuff I've Seen, 232, 241
- StumbleUpon, 317, 335
- summaries, 8, 16, 120, 122, 123, 126, 128
  - summary length, 9
- SuperBook, 182–183, 190–193, 252, 263
- surrogates, 8, 91–92, 94–95, 101, 103, 106, 107, 110, 112, 120–123, 126–128, 130
- sweet spot, 28, 196, 205
- synthesis. *See* sensemaking
- table-of-contents views, 123, 182–187, 190–195, 200
- tabular views, 245, 253
- tag clouds, 289, 304
- tagging. *See* social tagging
- TAKMI, 282, 295
- tamoxifen, 159, 165, 177, 184
- task analysis, 6
- taste, 219
- taxonomies. *See* query taxonomies
- tea or coffee, 108, 113
- teleporting, 79
- TellMe, 302, 318
- term expansions, 11, 25, 99–103. *See* query
  - term suggestions
    - suffix term expansion, 101, 103
- term order variation, 101, 103
- text analysis, 281–296, 312
- text classification, 99, 102, 199, 208, 215, 225
- text messages, 302, 318
- text mining, 281–286, 295–300
- TextArc, 288, 303
- thematic maps, 273–278, 285–292
- ThemeRiver, 293, 308
- ThemeScapes, 273, 287
- thrashing, 79, 142, 147
- three dimensional. *See* 3D
- thumb typing, 300, 316
- Thumbbar, 129
- ThumbBar, 134, 252, 263
- thumbnails, 19, 139, 144, 158, 163–165, 170, 173, 263–267, 275–278, 304, 305, 321, 322
  - textually enhanced, 265, 277
- TileBars, 254–261, 266–273
- timing
  - in evaluation, 61–62
  - qualified search speed, 62
  - response time, 14, 131, 136
  - scan times, 252, 263, 264, 276
- titles, 115, 116, 120, 122, 126, 245, 253



- to be or not to be, 17  
 TOC. *See* table-of-contents views  
 Toshagu Shrine, 192, 201  
 transactional queries, 84, 89  
 travel sites, 214, 224  
 TREC, 31–33, 96, 99, 223, 233, 310, 327  
   ad hoc track, 31, 33, 99, 101, 123, 130  
   critiques, 32–33  
   hard track, 153, 160  
   interactive track, 33  
   question answering track, 96, 99  
   routing track, 216, 226  
   video track, 310, 327  
 TRECVID, 310, 327  
 treemaps, 245–247, 256  
 triage, 283, 297  
 TRIST, 283–286, 297–300  
 trucks, 189, 197
- U Rank, 318, 336  
 universal search, 315, 333  
 URLs, 2, 9, 122, 126  
*USA Today*, 175, 183  
 usability, 5, 29–30  
 usability measures  
   effectiveness, 5, 30  
   efficiency, 5, 30  
   errors, 5, 30  
   memorability, 5, 30  
   satisfaction, 30, 222, 233  
   subjective responses, 5, 30  
 usability testing  
   discount testing, 6  
   formal studies, 6  
   informal studies, 6  
   usability laboratory, 37  
 user modeling, 214, 225  
 user satisfaction. *See* satisfaction  
 user-centered design, 5, 34
- Valentina Tereshkova, 107, 112  
 VAST, 286, 300  
 Venn Diagrams, 247, 259  
 vertical sites, 163, 170, 175, 183, 315, 323, 333, 341  
 VIBE, 261, 269, 273, 280  
 video collections, 310, 327  
 video search, 310–312, 326–329  
 VIKI, 169, 177  
 virtual keyboard, 300, 316  
 Visual WordNet, 294, 308
- visualization, 14, 130, 131, 135, 137, 139, 144, 234–280, 294  
   Boolean queries, 247–251, 262  
   data types, 238–247, 249–256  
   faceted navigation, 267–273, 279–285  
   nominal data types, 239–247, 249, 251–256, 293, 306  
   principles, 235–247, 256  
   query specification, 247–252, 258–263  
   query term suggestions, 252, 263  
   query terms, 252–261, 263–273  
   text analysis, 281–296, 312  
   thumbnails, 263–267, 275–278  
 visualization, 218, 228  
 Vivisimo, 207, 217, 277, 291  
 vocabulary problem, 24–25  
 voice queries. *See* spoken queries  
 VQuery, 248, 259
- weather in Berkeley, 133, 139  
 Web 2.0, 317, 334  
 Web Book, 139, 144  
 Web browsers, 19, 104, 106, 158, 163, 164, 170  
   address bar, 2, 104, 106  
   Chrome, 19, 104, 106, 129, 134  
   Firefox, 129, 134  
   Safari, 302, 319  
 Web Forager, 139, 144, 170, 178  
 Web Fountain, 283, 297  
 WebRat, 273, 287  
 WebTOC, 185, 193  
 WeFeelFine, 271, 284  
 Wikipedia, 306, 323  
 Windows XP, 104, 108  
 wisdom of crowds, 218, 228, 317, 335  
 within-participants design, 41  
 word clouds. *See* tag clouds  
 Word Space, 294, 308  
 Word Tree, 288, 303  
 Wordle, 289, 304
- Xerox, 257, 269  
 xFIND, 273, 287
- Yahoo, 11, 13, 23, 28, 151, 157, 158, 165, 187–188, 195–196, 213, 218, 224, 228, 300, 302, 317, 318, 321, 334, 336, 340  
 Yahoo Alerts, 215, 225  
 Yahoo Answers, 321, 340
- zooming, 171, 179, 238, 247, 304, 321  
 zvents, 21

## Author Index

- Aalbersberg, I., 154  
 Abowd, G., 309  
 Ackerman, M., 77, 79, 80, 87, 158  
 Adar, E., 19, 49, 88, 211, 232  
 Adcock, J., 310, 311  
 Adomavicius, G., 214  
 Agichtein, E., 9, 49, 94, 121, 122, 321  
 Ahn, J.-S., 13, 216, 217  
 Albers, M. C., 214  
 Albert, D., 9  
 Albert, I., 220  
 Allan, J., 153, 235, 277, 278  
 Allen, B., 25, 57, 235  
 Allen, R. B., 278  
 Alonso, O., 44  
 Alvarado, C., 77, 79, 80, 87, 158  
 Alvey, B., 248, 249  
 Amarasinghe, S., 14, 154  
 Amento, B., 158  
 Amershi, S., 320  
 An, A., 48  
 Anderson, T., 257  
 Andrews, K., 8, 243, 258, 273, 274, 276  
 Androutopoulos, I., 95  
 Anghelescu, H., 56  
 Anick, P., 11–13, 48, 77, 105, 144, 145, 149,  
 151, 248, 249  
 Aris, A., 294, 295  
 Artola, A., 14, 154  
 Ashley, J., 308, 309  
 Aula, A., 2, 9, 33, 41, 42, 56, 60, 62, 75, 113,  
 127  
 Auvil, L., 282, 296  
 Ayers, E., 263  
  
 Back, M., 33, 319–321  
 Bainbridge, D., 305, 306  
  
 Bakshi, K., 9, 98, 127  
 Balabanović, M., 220  
 Baldonado, M., 165  
 Baldonado, M. Q. W., 128, 230  
 Baluja, S., 298, 299  
 Banko, M., 97  
 Bar-Ilan, J., 49  
 Barreau, D., 231  
 Basalaj, W., 209, 309  
 Basu, C., 220  
 Bateman, J., 55, 92, 93, 154  
 Bates, C., 38, 134  
 Bates, M., 68, 71, 73, 77, 190  
 Baudisch, P., 58, 129, 130, 238, 254, 302, 305  
 Beaudouin-Lafon, M., 34  
 Bederson, B., 235, 270, 271, 277, 278, 294,  
 296, 309  
 Bederson, B. B., 231, 263  
 Belkin, N., 64, 75, 102, 103, 152, 162, 217, 258  
 Bell, D., 59  
 Ben-Bassat, T., 27, 46  
 Bergman, O., 79, 231  
 Bernstein, M., 322  
 Bertin, J., 237  
 Bett, M., 313  
 Beyth-Marom, R., 79, 231  
 Bharat, K., 214  
 Bickmore, T., 302  
 Biemans, H., 56  
 Bier, E., 165, 166  
 Bilal, D., 3, 59, 94  
 Bilenko, M., 11, 13, 131, 147, 149, 151  
 Billsus, D., 230  
 Björk, S., 302  
 Blackwell, A., 19, 231, 304, 305  
 Blackwell, J., 39

- Blair, D., 61, 98  
 Blandford, A., 53  
 Bodnar, A., 171, 172, 283, 285  
 Boren, M., 35  
 Borgman, C., 68, 69, 92  
 Boyd, D., 245  
 Boyle, J., 108  
 Brandes, U., 243, 293  
 Breese, J., 230  
 Brennan, J., 248, 249  
 Brill, E., 97, 142–144  
 Brin, S., 16  
 Broder, A., 65, 66, 83, 84, 86, 90  
 Brooks, H., 64  
 Brown, K., 38, 134  
 Bruce, H., 19, 231  
 Brueni, D. J., 242, 244  
 Brunk, B., 71, 164  
 Bruns, T., 21  
 Brusilovsky, P., 13, 216, 217  
 Bruza, P., 11, 144, 145  
 Buchanan, G., 53  
 Buckley, C., 58, 59, 153, 154  
 Burke, R., 97  
 Burkowski, F., 9, 15, 109, 110  
 Buyukkokten, O., 300, 302  
 Byrd, D., 6, 13, 64, 65, 83, 129, 252, 253
- Cadiz, J., 16, 19, 47, 182, 231  
 Cai, D., 309  
 Cannata, P., 108  
 Carbonell, J., 125  
 Card, S., 57, 73, 80, 81, 123, 139, 164, 165,  
 168–170, 238, 294  
 Carpineto, C., 263  
 Cass, T., 211  
 Castillo, C., 321  
 Catledge, L., 48  
 Chalmers, M., 273  
 Chan, S., 14, 154  
 Chandler, C., 196  
 Chandrasekar, R., 139, 264  
 Chang, S.-J., 75  
 Chapparo, B., 163  
 Chatratchart, J., 35, 58  
 Chaudari, V., 231  
 Chen, C., 57, 234, 235  
 Chen, F., 123  
 Chen, H., 178, 179, 202, 205, 208, 273, 275,  
 276  
 Chen, M., 48, 54, 133, 183, 185, 224, 307, 311,  
 312  
 Chen, S., 310  
 Chen, X., 205  
 Cheyer, A., 231
- Chi, E., 222  
 Chi, E. H., 319  
 Chignell, M., 75, 77  
 Chin, J., 44  
 Chitson, P., 273  
 Cho, J., 224, 232  
 Choi, J., 313, 314  
 Chou, V., 322  
 Christos, F., 39  
 Christos, K., 39  
 Chuang, S., 86  
 Chung, G., 3, 94  
 Church, K., 302  
 Clarke, C., 9, 15, 94, 109, 110, 121, 122  
 Claypool, M., 220  
 Clement, T., 282, 296  
 Cleveland, W., 237  
 Cockburn, A., 263, 279, 280  
 Cohen, M., 169  
 Cohen, W., 220  
 Collins, C., 288, 290  
 Combs, T., 235  
 Cool, C., 55, 75, 102, 103, 162  
 Coombs, J., 169, 170  
 Cooper, A., 7, 49, 167  
 Cooper, M., 310, 311  
 Cormack, G., 9, 15, 109, 110  
 Corritore, C., 56  
 Cort, B., 81, 82, 170, 171, 283  
 Cosley, D., 220  
 Cousins, S., 68, 92, 107, 165–167  
 Cowley, P., 80  
 Cramer, N., 273–275  
 Crestani, F., 57, 302, 303, 313  
 Cribbin, T., 279  
 Croft, B., 277  
 Croft, W., 6, 13, 64, 65, 83, 144, 153, 154, 214,  
 216  
 Croft, W. B., 232  
 Cronen-Townsend, S., 153, 154, 214, 216  
 Cronin, D., 7  
 Cucerzan, S., 11, 13, 131, 142–144, 147, 149,  
 151  
 Cuevas, G. T., 14, 154  
 Cugini, J., 235, 279  
 Cui, H., 144  
 Cunningham, S., 53, 313  
 Cutrell, E., 9, 16, 19, 47, 126, 137, 178, 179,  
 182, 205, 208, 231  
 Cutting, D., 123, 165, 199, 274  
 Czerwinski, M., 139, 169, 170, 235, 263, 271,  
 272, 294, 296, 305, 309
- Dakka, W., 199  
 Darrell, T., 313

- Das, A., 99, 228, 229  
 Datar, M., 99, 228, 229  
 Dawson, P., 189  
 de Jong, F., 312  
 de Rooij, O., 312  
 DeAngeli, A., 313  
 Dearman, D., 83  
 Dempsey, L., 159, 208  
 Dennis, S., 11, 144, 145  
 Dermen, D., 57  
 Deshpande, M., 222  
 Devlin, S., 108  
 Dhamija, R., 245  
 Dialog, Inc 107  
 DiCuccio, M., 155  
 Diehl, C., 200  
 Diehl, V., 44  
 Dinet, J., 108  
 Divoli, A., 9–11, 147, 148, 267  
 Doan, K., 21  
 Dollu, V., 153  
 Dom, B., 308, 309  
 Don, A., 282  
 Donath, J., 245  
 Donato, D., 321  
 Doncheva, M., 169  
 Dorr, A., 3, 94  
 Dosinger, G., 273  
 Dou, Z., 224, 226–228  
 Downie, J., 313  
 Draper, S., 29, 34  
 Drucker, S., 169  
 Druin, A., 270, 271  
 Druschel, P., 225, 318  
 Dudek, C., 27, 45  
 Duffy, J., 302  
 Dumais, S., 9, 16, 19, 24, 25, 47, 53, 94, 97,  
 99, 121, 122, 126, 154, 178, 179, 182, 205,  
 208, 211, 213, 222, 223, 227, 231, 232, 318,  
 323  
 Dumais, S. T., 232  
 Dunlop, M., 29, 34  
 Dziadosz, S., 139, 264
- Eastman, C., 114  
 Edmonds, A., 211  
 Egan, D., 9, 75, 123, 128, 183, 184  
 Eick, S. G., 286, 287  
 Ekstrom, R., 57  
 Eleftherios, P., 39  
 Elgin, B., 321  
 Elie, C., 39  
 Ellis, D., 69, 313  
 English, J., 21, 54, 159, 190, 194, 267  
 Ennis, M., 53, 64, 65, 82
- Esenther, A., 312  
 Etzioni, O., 180, 205, 206  
 Evans, B., 319  
 Everts, I., 312  
 Eysenbach, G., 77
- Fagan, L., 186, 208, 210  
 Fang, N., 158  
 Fass, A., 169  
 Faulring, A., 58, 139, 263, 265, 266  
 Favart, M., 108  
 Feinberg, J., 198  
 Feldman, D., 242  
 Feldman, R., 281  
 Fellbaum, C. E., 245  
 Fernanda, B., 288, 291  
 Few, S., 235–237  
 Field, B., 309  
 Fischer, G., 214, 232  
 Fisher, D., 245  
 Fishkin, K., 250  
 Flickner, M., 308, 309  
 Flood, J., 153  
 Fluit, C., 269  
 Flynn, R., 248, 249  
 Fogg, B., 158  
 Foley, C., 319  
 Fontoura, M., 86  
 Forlines, C., 312  
 Forlizzi, J., 169, 302  
 Fowler, R. H., 277  
 Fowler, W. A. L., 277  
 Fox, E. A., 242, 244  
 Fox, S., 222  
 Franz, M., 97  
 Franzen, K., 25, 101  
 Freitag, D., 230  
 French, J., 57  
 Frokjær, E., 8, 238, 252–254, 274, 275  
 Fu, H., 302  
 Fu, X., 153  
 Furnas, G., 24, 25, 76  
 Fusani, D., 55
- Gabrilovich, E., 86  
 Gang, A., 99, 228, 229  
 Garcia-Molina, H., 214, 300, 302, 309, 317  
 Garlock, K., 158  
 Gauch, S., 86, 224  
 Gauger, M., 309  
 Gay, G., 26, 55, 80, 122, 136, 137, 139, 225  
 Geisler, G., 71, 164  
 Geusebroek, J., 312  
 Gionis, A., 321  
 Goker, A., 48

- Gokhale, A., 220  
 Goldstein, J., 125  
 Goldstein, M., 311  
 Golovchinsky, G., 33, 319–321  
 Gomez, L., 24, 25, 108  
 Gopalkrishnan, P., 220  
 Gorg, C., 282, 283  
 Gorkani, M., 308, 309  
 Gradovitch, N., 79, 231  
 Graham, A., 309  
 Graham, J., 129, 252  
 Granitzer, M., 8, 243, 273, 274, 276  
 Granka, L., 26, 55, 80, 122, 136, 137, 139, 225  
 Grau, X., 242  
 Greenberg, S., 263  
 Greene, S., 14  
 Greene, S. L., 108  
 Grefenstette, G., 164  
 Gregory, M., 282  
 Greiner, W., 144  
 Greisdorf, H., 55, 154  
 Grigoryan, V., 155  
 Grimes, C., 36  
 Grinstein, G., 286  
 Griswold, W. G., 298, 299  
 Gross, R., 313  
 Gruen, D., 288  
 Grunfeld, L., 153  
 Guan, Z., 9, 126, 137  
 Gummadi, K., 225, 318  
 Gurrin, C., 319  
 Gütl, C., 258, 273, 274  
 Guturu, H., 9, 10, 267
- Hafner, J., 308, 309  
 Hager, D., 39  
 Hakala, N., 55, 154  
 Halasz, F., 169  
 Halsey, M., 14, 154  
 Halvey, M., 288  
 Halvorsen, P., 164, 165  
 Hammond, K., 97  
 Hanani, U., 214  
 Handschuh, S., 164, 258  
 Hanna, L., 58, 129, 130, 238, 254  
 Hansell, S., 95  
 Hanssen, D., 248, 249  
 Harabagiu, S., 97  
 Harada, S., 312  
 Hargittai, E., 2, 103, 143, 144  
 Harman, D., 31, 33, 58, 59, 61, 153  
 Harman, H., 57  
 Harper, D., 68, 170  
 Harper, R., 171, 172, 283, 285  
 Harris, C., 270
- Hassenzahl, M., 27, 45  
 Hatano, K., 229  
 Hauptmann, A., 307, 311, 312  
 Haveliwala, T., 224  
 Havre, S., 261, 262, 293  
 He, D., 13, 48, 216, 217  
 He, X., 309  
 Healy, C., 236  
 Hearst, M., 9–11, 14, 15, 21, 40, 44, 54, 98,  
 109, 111, 124, 127, 133, 147, 148, 159,  
 163–165, 183, 185, 186, 190, 194, 196,  
 199–202, 208–210, 245, 254, 255, 267, 271,  
 281, 283, 288, 314, 323  
 Heath, L. S., 242, 244  
 Heckerman, D., 230  
 Heer, J., 222, 238, 245  
 Heikes, R., 281  
 Heimonen, T., 257  
 Helfman, J. I., 263  
 Helft, M., 52  
 Hembrooke, H., 26, 55, 80, 122, 136, 137, 225  
 Hemmje, M., 261  
 Henderson, C., 313  
 Henderson, S., 14, 154  
 Hendry, D., 68, 170  
 Henne, R., 37, 40, 43, 50–52  
 Henzinger, M., 48, 92, 93  
 Herlocker, J., 218, 220, 229  
 Hert, C., 189  
 Hertzum, M., 75, 79, 108, 142, 238, 247  
 Hetzler, E., 261, 262, 273, 293  
 Heymann, P., 317  
 Hightower, R. R., 263  
 Hildreth, C., 108  
 Hill, W., 129, 158, 252  
 Hindle, D., 313, 314  
 Hirschberg, J., 169, 313, 314  
 Hirsh, H., 220  
 Hix, D., 242, 244  
 Hockley, A., 3, 94, 95, 187  
 Hoerber, O., 256, 257  
 Hoefler, M., 243, 293  
 Hoffman, H., 139, 263  
 Hollan, J., 129, 252  
 Hollan, J. D., 263, 298, 299  
 Holmquist, L., 302  
 Hölscher, C., 56  
 Hon, H.-W., 87  
 Hong, D., 302  
 Hong, J., 54, 133, 183  
 Hornbæk, K., 8, 30, 44–46, 238, 252–254, 274,  
 275  
 Horvitz, E., 53, 154, 211, 213, 222, 223, 227,  
 230, 232, 318  
 Hotchkiss, G., 27, 38, 134, 233, 315

- Houston, A. L., 202, 273, 275, 276  
 Houston, M., 25, 53, 275  
 Hovel, D., 230  
 Hovy, E., 97  
 Hristidis, V., 125  
 Huang, Q., 308, 309  
 Huang, T., 309  
 Huang, X., 48  
 Huang, Y., 231  
 Hudson, S., 302  
 Hull, D., 164, 215  
 Hurst, M., 26, 233, 323  
 Hussam, A., 257  
 Hutchings, D., 172  
 Hutchinson, H., 270, 271  
 Huurnink, B., 312  
 Huynh, D., 9, 98, 127
- Ihlwan, M., 321  
 Ingwersen, P., 64  
 Ipeirotis, p., 199  
 iProspect 133, 315  
 ISO 9241-11 29  
 Ittycheriah, A., 97
- Jacob, E., 189  
 Jacobs, N., 257  
 Jacobson, T., 55  
 Jameson, A., 230, 232  
 Jancke, G., 16, 19, 47, 182, 231  
 Jansen, B., 80, 85, 92, 93, 113, 114, 141, 150, 298  
 Janssen, Jr., W., 169  
 Jarvelin, K., 64  
 Jasonsmith, M., 263  
 Jatowt, A., 317  
 Jeffries, R., 36, 68, 69, 72, 77, 81  
 Jeh, G., 215, 221  
 Jellinek, H., 164  
 Jenkins, C., 56  
 Jhaveri, N., 257, 263, 264  
 Joachims, T., 26, 80, 122, 136, 137, 139, 225, 226, 230, 318  
 Johnson, B., 245  
 Johnson, W., 123, 164  
 Jones, G., 319  
 Jones, M., 305, 306  
 Jones, R., 19, 49, 88, 144, 231, 232  
 Jones, S., 247, 248, 305, 306  
 Jones, W., 19, 231  
 Jonker, D., 82, 171, 283  
 Jose, J., 9, 56, 123, 125, 128, 154, 216, 233  
 Joshi, A., 86  
 Josifovski, V., 86
- Jurafsky, D., 44  
 Jurrus, E., 261, 262
- Kaasinen, E., 298  
 Kaasten, S., 263  
 Kahle, B., 230  
 Kaiser, M., 9, 44, 98, 127  
 Käki, M., 2, 33, 47, 60, 62, 180, 203–205, 209, 277  
 Kamba, T., 214, 229  
 Kamvar, M., 298, 299  
 Kang, H., 309  
 Kantamneni, R., 9, 12, 13, 105, 128, 151  
 Kantrowitz, M., 125  
 Kanungo, T., 128  
 Kapoor, N., 220  
 Karadi, C., 271  
 Karger, D., 9, 77, 79, 80, 87, 98, 127, 158, 165, 199, 274, 322  
 Karis, D., 34  
 Karlgren, J., 25, 101  
 Karlson, A., 271, 272, 305  
 Karnawat, K., 222  
 Karypis, G., 222  
 Kass, R., 214  
 Katz, B., 9, 98, 127  
 Keane, M., 288, 302  
 Keim, D., 294  
 Kekäläinen, J., 33  
 Kellar, M., 83, 88, 89  
 Kelly, D., 55, 102, 103, 153  
 Keppel, G., 37, 40, 42  
 Kerr, B., 198  
 Ketchum, D., 9, 75, 123, 128, 183, 184  
 Kickmeier, M., 9  
 Kienreich, W., 8, 243, 273, 274, 276  
 Kim, G., 102, 103  
 Kim, J., 102, 103  
 Kimber, D., 313, 314  
 Kirschenbaum, M., 296  
 Kleiboemer, A., 209, 274  
 Klieber, W., 8, 243, 273, 274, 276  
 Klotz, L., 123, 164  
 Koelma, D., 312  
 Koenemann, J., 152, 217  
 Kohavi, R., 37, 40, 43, 50–52  
 Kohler, C., 77  
 Kohler, J., 312  
 Konstan, J., 218, 220, 229  
 Korfhage, R., 261, 262  
 Korfhage, R. R., 261, 267  
 Koseki, Y., 169  
 Koshman, S., 150  
 Koutrika, G., 317  
 Kozierok, R., 230

- Kraaij, W., 310, 312  
 Krishnapuram, R., 200, 203  
 Kriss, J., 288, 290, 291, 293  
 Ksikes, A., 9, 10, 267  
 Kuhlthau, C., 64, 69  
 Kuhn, K., 313  
 Kukich, K., 142  
 Kules, B., 179, 205, 208  
 Kulukin, V., 97  
 Kumar, R., 49  
 Kummamuru, K., 200, 203  
 Kuniavsky, M., 6, 25, 34  
 Kunkel, C., 261  
 Kupiec, J., 96, 123  
 Kushmerick, N., 230  
 Kwok, K. L., 59, 153  
  
 Lachenmann, A., 309  
 Lackner, W., 258, 273, 274  
 Lake, M., 15, 93  
 Lalmas, M., 152–154, 216  
 Lam, H., 302, 305  
 Lam, S., 220  
 Lamping, J., 245  
 Landauer, T., 9, 24, 25, 34, 75, 123, 128, 183, 184  
 Landay, J., 76  
 Lanning, T., 312  
 Lantrip, D., 273  
 Lapaugh, A., 48, 224  
 Laraki, O., 158  
 Larkin, J., 234  
 Larson, K., 169, 170, 235  
 Larson, M., 312  
 Larson, R., 189  
 Larvrenko, V., 153, 154, 214, 216  
 Laskowski, S., 235, 279, 286  
 Lau, T., 230  
 Law, E., 30, 44–46  
 Lazear, M., 209, 274  
 Lazonder, A., 56  
 Lee, B., 58, 129, 130, 238, 254, 294, 296  
 Lee, D., 308, 309  
 Lee, H., 102, 103, 319  
 Lehman, K., 39  
 Lerner, J., 243, 293  
 Lesk, M., 9, 75, 123, 128, 183, 184  
 Levi, M., 77, 78  
 Levinson, D., 60, 83–85, 90  
 Levison, L., 14, 154  
 Lewis, D. D., 153  
 Lewis, M., 261  
 Li, K., 21, 40, 54, 194, 208  
 Li, K. A., 298, 299  
 Li, M., 142, 143  
  
 Li, Z., 309  
 Liddy, E., 55  
 Lieberman, H., 222, 230  
 Liebling, D. J., 232  
 Lin, J., 9, 54, 97, 98, 127, 133, 155, 183  
 Lin, W., 307, 311, 312  
 Lin, X., 273, 276  
 Linden, G., 131, 220  
 Lindgaard, G., 27, 35, 45, 58  
 Ling, J., 45  
 Little, G., 322  
 Littman, M., 278  
 Litvak, Y., 14, 154  
 Liu, F., 224  
 Liu, Z., 282, 283  
 Ljungstrand, P., 302  
 Lobb, B., 27, 45  
 Lochbaum, C., 9, 75, 123, 128, 183, 184  
 Logan, R., 126  
 Longbotham, R., 43, 51  
 Loranger, H., 7, 35  
 Lord, G., 296  
 Lotlikar, R., 200, 203  
 Lowe, J., 9, 44, 98, 127  
 Luhn, H., 124  
 Luo, Q., 302  
 Luo, Z., 87  
 Lynch, C., 114  
 Lytinen, S., 97  
  
 Ma, W., 144, 304, 309  
 Maarek, Y. S., 278  
 MacKay, B., 302  
 Mackay, W., 34  
 Mackinlay, J., 164, 165, 170, 237, 238, 294  
 Madani, O., 144  
 Maes, P., 219, 230, 233  
 Mahtab, T., 14, 154  
 Maiorano, S., 97  
 Malone, T., 169  
 Manber, U., 213  
 Mandel, M., 313  
 Mander, R., 169  
 Mann, T., 14, 131, 164, 258–260  
 Maple, A., 190  
 Marais, H., 48, 92, 93  
 Marchetti, P. G., 75, 162  
 Marchionini, G., 9, 14, 64, 66, 71, 75, 77, 78, 94, 106, 107, 120, 128, 154, 164, 269, 270, 273, 276  
 Markoff, J., 302  
 Maron, M., 61, 98  
 Marshall, C., 169, 170  
 Marshall, J., 158  
 Martzoukou, K., 59

- Masinter, L., 164, 165  
 Mason, L., 51  
 Matsuzawa, H., 282  
 Maybury, M., 313  
 Mayhew, D., 6, 34  
 McArthur, R., 11, 145  
 McCandless, T., 129, 252  
 McFadden, E., 39  
 McGill, R., 237  
 McGivney, S., 319  
 McInnes, S., 247, 248  
 McIntosh, S., 305, 306  
 McKenzie, B., 263, 279, 280  
 McKeon, M., 288, 291  
 McNab, R., 313  
 McNee, S., 220  
 McSherry, D., 162  
 Meadow, C., 110, 114  
 Mehrotra, S., 309  
 Meng, W., 224  
 Meredith, D., 14, 283, 284  
 Meyer, J., 27, 46  
 Miao, G., 304  
 Michard, A., 108, 247  
 Milic-Frayling, N., 19, 231, 304, 305  
 Millen, D., 198, 288  
 Miller, B., 220, 229  
 Miller, J., 36  
 Miller, M., 235, 279  
 Miller, N., 261, 262  
 Miller, R., 322  
 Miranda, T., 220  
 Mishne, G., 321  
 Mislove, A., 225, 318  
 Mitchell, T., 230, 231  
 Mitra, M., 153, 154  
 Mittal, V., 125  
 Miyachi, T., 312  
 Modjeska, D., 169  
 Moran, T., 169  
 Moricz, M., 48, 92, 93  
 Morita, M., 222  
 Morris, D., 113  
 Morris, M., 319, 320  
 Morrison, J., 58, 139, 263, 265, 266  
 Morse, E., 261  
 Morville, P., 76  
 Moser, J., 258, 273, 274  
 Motwani, R., 16  
 Mußler, G., 164, 258  
 Muller, M., 288  
 Munzner, T., 279  
 Murakami, A., 282  
 Muramatsu, J., 2, 93, 99, 150, 230  
 Muresan, G., 102, 103  
 Murnikov, P., 220  
 Mydland, M., 222  
 Myers, B., 302  
 Nachmias, R., 79, 231  
 Nadir, R., 26, 27  
 Nagano, T., 282  
 Nakamura, S., 317  
 Nakarada-Kordic, I., 27, 45  
 Nakatani, C., 313  
 Nakov, P., 9, 10, 267  
 Nardi, B., 231  
 Nardi, B. A., 169  
 Nasukawa, T., 282  
 Nation, A., 185  
 Netes, D., 220  
 Newman, M., 76  
 Ng, A., 44, 97  
 Niblack, W., 308, 309  
 Nichols, D., 17, 165, 166, 319  
 Nie, J., 87, 144  
 Nielsen, J., 5–7, 29, 34–37, 54, 55, 57, 60, 73, 74, 77, 99, 133, 163, 233  
 Nikolaos, A., 39  
 Nikolaos, T., 39  
 Norman, D., 27, 66, 67, 233, 322  
 Norman, K., 44  
 Nowell, L., 80, 293  
 Nowell, L. T., 242, 244  
 Obry, P., 278  
 O'Connell, T., 286  
 O'Connor, B., 44  
 O'Connor, N., 319  
 O'Day, V. L., 68, 69, 72, 77, 81  
 Oddy, R., 64, 162  
 Oelke, D., 294  
 Ogden, W., 108  
 O'Hara, K., 81  
 Olsen, K., 261, 262  
 Öquist, G., 311  
 Ordelman, R., 312  
 Olson, T., 159  
 Oren, T., 169  
 Orr, D., 9, 128  
 Ortega, M., 309  
 Osipovich, A., 158  
 Over, P., 310  
 Oviatt, S., 313  
 Owens, A., 270  
 Paek, T., 126  
 Paepcke, A., 165, 166, 300, 302, 309



- Page, L., 16  
 Paice, C., 319  
 Paley, W., 288, 289  
 Paliouras, G., 213  
 Pan, B., 26, 80, 122, 136, 137, 225  
 Pan, Y., 313  
 Pang, B., 49  
 Papatheodorou, C., 213  
 Paranjpe, D., 97  
 Parekh, N., 282, 283  
 Parekh, R., 51  
 Parikh, N., 144  
 Parush, A., 26, 27  
 Pasca, M., 97  
 Passerault, J., 108  
 Patel, A., 213  
 Patterson, E., 81  
 Paul, J., 158  
 Pausch, R., 169  
 Pauws, S., 313  
 Pazzani, M., 230  
 Pedersen, G. S., 263  
 Pedersen, J., 80, 93, 113, 123, 141, 144, 164, 165, 199, 201, 202, 209, 274  
 Peng, F., 48  
 Pennock, K., 273  
 Pereira, F., 313, 314  
 Pernice, K., 37  
 Perrine, K., 261, 262  
 Peterson, R., 17  
 Petkovic, D., 308, 309  
 Pew 4, 307  
 Pickens, J., 33, 310, 311, 319–321  
 Pieper, J., 14, 283, 284  
 Pier, K., 165, 166  
 Pierrakos, D., 213  
 Piontek, S., 158  
 Pirolli, P., 57, 58, 73, 76, 80, 81, 139, 164, 168, 169, 200, 222, 245, 263, 265, 266  
 Pitkow, J., 48, 211, 222  
 Plaisant, C., 5, 14, 21, 29, 37, 44, 46, 282, 286, 296  
 Platt, J., 309  
 Plumlee, M., 238  
 Plummer, B., 257  
 Poliner, G., 313  
 Pollitt, A. S., 270  
 Pollock, A., 3, 94, 95, 187  
 Ponceleon, D., 169  
 Pottier, M., 273  
 Potts, M., 19, 88, 232  
 Pratt, W., 2, 93, 99, 150, 186, 208, 210  
 Prevost, J., 14, 154  
 Proulx, P., 81, 82, 170–172, 283, 285  
 Pu, H., 86  
 Qiu, F., 224, 232  
 Qu, Y., 25, 53, 275  
 Quan, D., 9, 98, 127  
 Qvarfordt, P., 33, 319–321  
 Raiha, K.-J., 263, 264  
 Rainie, L., 297  
 Rajaram, S., 99, 228, 229  
 Ramakrishnan, G., 97  
 Ramey, J., 35  
 Ranganathan, S., 190  
 Rangnekar, A., 158  
 Ranie, L., 307  
 Rao, D., 242, 244  
 Rao, R., 123, 164, 165, 245, 294  
 Rao, S., 300  
 Ravichandran, D., 97  
 Redström, J., 302  
 Reimann, R., 7  
 Reiterer, H., 14, 131, 164, 258–260  
 Remde, J., 9, 75, 123, 128, 183, 184  
 Rennison, E., 273  
 Resnick, P., 218  
 Rettig, M., 34  
 Rey, B., 144  
 Rice, R. E., 75  
 Richardson, M., 199  
 Riedl, J., 218, 220, 229  
 Rieh, S., 158  
 Rimmer, J., 53  
 Ring, L. T., 263  
 Ritchie, G., 95  
 Rivadeneira, A., 288  
 Rivadeneira, W., 277, 278  
 Robbins, D., 16, 19, 47, 169, 170, 182, 231, 235, 271, 272, 305  
 Robbins, J., 248, 249  
 Robertson, G., 139, 164, 165, 169, 170, 235, 238, 263, 271, 272, 294, 296, 305  
 Robertson, S., 215  
 Robison, J., 213  
 Rodden, K., 19, 209, 231, 300, 304, 305, 309  
 Rogers, L., 163  
 Rogers, R., 169  
 Romano, G., 263  
 Rommelse, K., 230  
 Rose, A., 242  
 Rose, D., 9, 44, 53, 60, 62, 83–85, 90, 107, 128, 169  
 Rose, J., 296  
 Rosenfeld, L., 76  
 Rosenholtz, R., 58, 139, 263, 265, 266  
 Rosner, D., 288  
 Roth, E., 81  
 Roukos, S., 97

- Roy, S., 200, 203  
 Rui, Y., 309  
 Russell, A., 270  
 Russell, D., 25, 36, 53, 73, 79, 80, 142–144,  
 168, 169, 275  
 Ruthven, I., 9, 56, 59, 123, 125, 128, 152–154,  
 216, 233  
  
 Sabol, V., 8, 243, 258, 273, 274, 276  
 Sahami, M., 230  
 Sakagami, H., 229  
 Salesin, D., 169  
 Salomon, G., 169  
 Salton, G., 64, 110, 153  
 Sanderson, M., 9, 16, 123  
 Sanger, J., 281  
 Saracevic, T., 31, 64, 85, 92, 93, 113, 298  
 Sarin, R., 16, 19, 47, 182, 231  
 Sartin, M., 220  
 Sarwar, B., 220, 229  
 Saufley, W., 37, 40, 42  
 Sav, S., 319  
 Sawhney, H., 308, 309  
 Schacter, J., 3, 94  
 Schank, P., 200  
 Schatz, B. R., 202, 273, 275, 276  
 Schilit, B., 302  
 Schoenberg, S., 97  
 Scholtz, J., 80, 286  
 Schraefel, M., 270  
 Schroeder, W., 35  
 Schroh, D., 81, 82, 170–172, 283, 285  
 Schur, A., 273  
 Schusteritsch, R., 300  
 Schütze, H., 144, 164, 211  
 Schuurmans, D., 48  
 Sebastiani, F., 99, 199, 208, 215  
 Sebrechts, M., 235, 279  
 Sellen, A., 81  
 Sewell, R. R., 202, 273, 275, 276  
 Shah, C., 33, 319–321  
 Shakhshir, S., 14, 154  
 Shankar, L., 205  
 Shapira, B., 214  
 Sharanand, U., 219  
 Shen, D., 85–87  
 Shen, X., 223, 228  
 Shepherd, M., 88, 89  
 Sherman, C., 17  
 Sherman, T., 38, 134  
 Shinoda, Y., 222  
 Shipman, F., 169  
 Shipman III, F., 169, 170  
 Shneiderman, B., 5, 6, 13, 14, 21, 29, 37, 44,  
 46, 64, 65, 82, 83, 105, 108, 131, 154, 179,  
 205, 208, 233, 242, 245, 249, 269, 282, 294,  
 295, 309  
 Shoham, Y., 220  
 Shore, B., 56, 82  
 Shoval, P., 214  
 Shtub, A., 26, 27  
 Shyu, M., 310  
 Sigman, E., 133, 185  
 Sihvonen, A., 55, 144  
 Siirtola, H., 113  
 Silverstein, C., 48, 92, 93  
 Simon, H., 234  
 Sinclair, D., 209, 309  
 Singal, K., 200, 203  
 Singh, J., 48, 224  
 Singh, S., 224  
 Singhal, A., 153, 154, 313, 314  
 Singhal, K., 282, 283  
 Sinha, R., 21, 26, 52, 54, 159, 190, 194, 267  
 Sinha, V., 9, 98, 127  
 Skaburskis, A., 81, 170  
 Slaney, M., 25, 53, 275  
 Small, H., 294, 295  
 Smalley, P., 196  
 Smeaton, A., 310, 319  
 Smeulders, A., 312  
 Smith, B., 220  
 Smith, D., 270  
 Smith, G., 271, 272, 305  
 Smith, L., 313  
 Smith, M., 296  
 Smyth, B., 302  
 Smyth, G., 19, 231  
 Snoek, C., 312  
 Snoek, C. G. M., 312  
 Snow, R., 44  
 So, W., 279  
 Sochats, K., 261, 262  
 Soergel, D., 273, 276  
 Sohn, T., 298, 299  
 Sokolov, J., 34  
 Sommerer, R., 19, 231, 304, 305  
 Sommerfield, D., 37, 40, 43, 50–52  
 Song, R., 87, 224, 226–228, 304  
 Spence, R., 311  
 Spink, A., 55, 80, 85, 92, 93, 113, 141, 150,  
 154, 298  
 Spoerri, A., 261, 267  
 Spool, J., 35, 53, 54, 77  
 Sprague, D., 279  
 Spring, M., 261, 262  
 Spyropoulos, C., 213  
 Stadnyk, I., 214  
 Stanfill, C., 230  
 Stasko, J., 172, 263, 282, 283

- Stefik, M., 73, 80, 168, 169  
 Steinberg, S., 158  
 Stewart, B., 44  
 Stockburger, D. W., 42  
 Stoica, E., 199  
 Stone, M. C., 250  
 Strube, G., 56  
 Sugiura, A., 169  
 Sugiyama, K., 229  
 Sundaresan, N., 144  
 Sutcliffe, A., 53, 64, 65, 82  
 Swan, R., 235, 277, 278  
 Swani, P., 158  
 Swearingen, K., 21, 40, 54, 159, 190, 194, 208, 267  
 Sweeney, S., 302, 303  
 Syn, S., 13, 216, 217
- Tabatabai, D., 56, 82  
 Takeda, K., 282  
 Takeuchi, H., 282  
 Tan, B., 223, 228  
 Tanaka, K., 317  
 Tandon, S., 171, 172, 283, 285  
 Tang, D., 36  
 Tang, M., 102, 103  
 Tanin, E., 131, 269  
 Tao, T., 9, 109  
 Tarkan, S., 282  
 Teevan, J., 19, 53, 77, 79, 80, 87, 88, 154, 158, 211, 213, 222, 223, 227, 231, 232, 318  
 Terveen, L., 158, 218  
 Thanisch, P., 95  
 Thiel, D., 169, 170, 235  
 Thies, W., 14, 154  
 Thomas, J. J., 273  
 Thompson, P., 153  
 Thompson, R., 277  
 Tobin, R., 38, 134  
 Tokunaga, H., 37, 40, 42  
 Tombros, A., 9, 16, 123  
 Tombros, T., 57, 313  
 Tomkins, A., 49  
 Tomuro, N., 97  
 Tory, M., 279  
 Tractinsky, N., 27, 46  
 Treinen, M., 158  
 Triesman, A., 236  
 Trigg, R., 123, 164  
 Truong, K., 83  
 Tufte, E., 235, 261  
 Tukey, J., 123, 165, 199, 274  
 Tullius, G., 14, 131, 258–260  
 Turnbull, D., 211  
 Turner, A., 273
- Turtle, H., 153  
 Tuzhilin, A., 214  
 Twidale, M., 17, 165, 166, 319
- Uhlir, S., 108  
 Uramoto, N., 282  
 Uyeda, K., 36
- Vakkari, P., 55, 70, 144, 154  
 van Dantzich, M., 139, 169, 170, 235, 263  
 van de Sande, K., 312  
 van der Heijden, H., 27, 45  
 Van Der Wege, M., 57  
 van Gemert, J., 312  
 van Ham, F., 288, 291  
 Van Kleek, M., 322  
 van Liempt, M., 312  
 van Schaik, P., 45  
 Varadarajan, R., 125  
 Varian, H., 218  
 Varma, C., 158  
 Vasilakis, J., 235, 279  
 Veerasamy, A., 258, 281  
 Viégas, F., 245, 288, 291  
 Vignoli, F., 313  
 Virzi, R., 34  
 Vo, B. D., 14, 154  
 Voorhees, E., 31, 33, 58, 59, 95, 144
- W-Y., M., 302  
 Wade, G., 169  
 Wærn, A., 214, 216, 221  
 Waibel, A., 313  
 Wake, W. C., 242, 244  
 Walz, J., 58, 59  
 Wang, S., 231  
 Ware, C., 236, 238  
 Warwick, C., 53  
 Waterworth, J., 75, 77  
 Wattenberg, M., 245, 288, 290, 291, 293  
 Watters, C., 88, 89, 302  
 Wecker, A., 278  
 Wei, X., 232  
 Wen, J.-R., 87, 144, 224, 226–228, 304, 309  
 West, R., 39  
 Westerman, S., 279  
 Wharton, C., 36  
 White, R., 9, 11, 13, 56, 94, 106, 107, 113, 120–123, 125, 128, 131, 147, 149, 151, 154, 216, 233  
 White, T., 222  
 Whiting, M., 273–275, 286  
 Whitney, P., 293  
 Whittaker, S., 79, 169, 231, 313, 314  
 Whitworth, B., 233

- Wiedenbeck, S., 56  
 Wigdor, D., 169  
 Wilbur, W., 155  
 Wilcox, L., 313, 314  
 Wildemuth, B., 55  
 Wilkins, P., 319  
 Willett, A., 261  
 Willett, P., 60, 200  
 Williams, J., 261, 262  
 Wilson, B. A., 277  
 Wilson, P., 108  
 Wilson, T., 83  
 Winograd, T., 16, 128, 165, 166, 302, 309  
 Wise, J. A., 273  
 Witten, I., 305, 306, 313  
 Wittenburg, K., 133, 185, 312  
 Wobbrock, J., 302  
 Wolfram, D., 85, 113, 298  
 Wong, Y., 169  
 Wood, K. R., 209, 309  
 Woodruff, A., 58, 139, 263, 265, 266  
 Woods, D., 81  
 Wooldridge, M., 9–11, 147, 148, 267  
 Wopereis, L., 56  
 Worring, M., 312  
 Woyke, E., 321  
 Wright, W., 81, 82, 170–172, 283, 285  
 Wroblewski, D., 129, 252  
 Wu, F., 279  
 Wu, Y., 205  
  
 Xiao, X., 302  
 Xie, H., 131, 269  
 Xie, X., 302, 304  
 Xiong, L., 49  
 Xu, J., 144  
  
 Yan, R., 307, 311, 312  
 Yan, T., 214  
 Yanbe, Y., 317  
 Yang, B., 153, 215, 221  
 Yang, C., 86  
 Yang, J., 307, 311–313  
 Yang, X. D., 256, 257  
 Ye, J., 9, 10, 267  
 Yee, K.-P., 21, 40, 54, 159, 190, 194, 208, 245, 267  
 York, J., 220  
 York, W., 139, 170  
 Yoshikawa, M., 229  
 Young, D., 108, 249  
 Yu, B., 296  
 Yu, C., 224  
 Yu, H., 313  
 Yu, Y., 87, 234, 235  
 Yuan, X., 56, 102, 103  
 Yusufali, S., 230  
  
 Zamir, O., 180, 205, 206  
 Zhai, C., 9, 109, 223, 228  
 Zhang, C., 310  
 Zhang, H., 87  
 Zhang, J., 269, 270  
 Zhang, T., 86  
 Zhang, X., 56  
 Zhang, Y., 142, 143  
 Zhao, S., 169  
 Zheleva, E., 282  
 Zheng, Z., 51  
 Zhou, M., 142, 143  
 Zhou, Y., 154  
 Zhu, M., 142, 143  
 Zhu, X., 313  
 Zhu, Y., 169