Index

0-face, 143
area
  of a quadrilateral, 369
  of a triangle, 369
atlas, 234
B-spline, 50
ball, 160, 175, 361
topological ball, 145
base, 160, 175
Bernstein polynomial, 54, 369
BÉZIER
  curve, 54, 70
    Lagrange function in terms of, 55
    reduced patch, 82
Bézier Lagrange analogy, 66
cache miss, 181
CATALAN
  number of, 150
cavity, 160, 175, 353
characteristic line, 302
characteristic point, 302
christmas tree, 212
circumcircle, 370
circumsphere, 370
complexity, 180
crown (of a $k$-face), 146
curve
  discrete curve, 247
    geometric triangulation of a, 220
    Hilbert curve, 181
    implicit curve, 234
    parametric curve, 234
d-$\text{simplex}$, 142
data structure, 151
enriched, 152
minimal, 151
DE CASTELJAU
  algorithm, 103
    evaluation of a point, 346, 348
    subdivision, 103, 346
degree of a vertex, 224
DELAUNAY
  admissibility, 214
    anisotropic measure, 189
    complexity, 180
    criterion, 168
    Delaunay $k$-face, 168
    Delaunay triangulation, 168
    general lemma, 169
    incremental method, 175
    measure, 176
    point insertion, 353
    properties, 172
    variants, 186
discrete
  curve, 247
    geometric support, 237, 242
    surface
      geometric characteristics, 254
divide and conquer, 156, 185
element
  geometric validity, 95
  rational element, 49
  reduced element, 26, 74
  simplicial element, 19
tensor element, 20
elementary flip, 146
enforcing a constraint
  by cutting, 198, 209
by flipping, 197, 206, 212
via divide and conquer, 200

EULER
relation, 222, 224
finite elements, 15

flip
edge flip in two dimensions, 148
elementary geometrical flip, 147
elementary topological flip, 147
face flip, 148
generalized flip, 147
in $d$ dimensions, 151
incremental method, 182
insertion and flip, 181

GABRIEL (Gabriel ball), 168
geometric support, 306, 325
continuous (of a discrete curve), 247, 252
continuous support (of a discrete surface), 263
geometric triangulation
of a curve, 220
of a surface, 221
geometric validity
planar element, 96
rational element, 121
reduced element, 115
surface element, 105
volume element, 105
graph of a triangulation, 146
GREEN–LAGRANGE (deformation), 273
hashing, 153, 359
hexahedron, 21, 24, 48
reduced element, 48
high order element
control coefficient, 350
incircle, 370
incremental method
flip, 182
generic, 159
naive, 160
insphere, 370
$k$-face, 142
constrained, 193
Delaunay, 168
LAGRANGE
curve, 67
generic function, 19, 20
reduced function, 26
shape function, 18
simplicial patch, 72
tensor patch, 71
Lagrange Bézier analogy, 54
LAGUERRE (diagram), 187
localization (of a point), 161, 365
locally Delaunay, 172
metric, 188
minimal sphere, 173
modeling
continuous $\rightarrow$ discrete, 234
discrete (of a parametric curve), 237
discrete (of a parametric surface), 242
discrete (of an implicit curve), 235
discrete (of an implicit surface), 238
discrete $\rightarrow$ continuous, 246
discrete $\rightarrow$ discrete, 278
natural entities
construction, 153
definition, 145
neighboring relationship, 155
nodes in terms of control points, 73
Nurbs, 50
parameterization, 311
pebble, 212
pentahedron, 21, 25
pipe, 195
point cloud, 278
Delaunay type method, 279
implicit method, 278, 283
method by means of sections, 292
specific method, 297
point localization, 161
power diagram, 187
prism, 21
property
$MaxMin$, 172
$MinMax$, 172
pyramid, 21, 25
quadrilateral, 21, 23
reduced element, 32
randomization, 180
rational triangle, 49
3D reconstruction, 278, 330
Riemannian space, 188
ring (of a $k$-face), 146
rugosity, 173
SCHÖNHARDT (polyhedron), 205
seed, 201
serendipity polynomial space, 36, 90
shape function, 18
rational function, 49
reduced function, 26
serendipity function, 26, 31
shell, 145, 363
simplification, 324
of a discrete curve, 248
of a discrete surface, 257
sliver, 174
stack, 353
STEINER (point), 205
surface
g-ometric triangulation of a, 221
implicit surface, 234
triangulation of a, 221
tetrahedron, 20, 22
topological
invariants, 222
modifications, 146
topology, 146
triangle, 19, 22
triangulation
anisotropic, 188
conformity, 143
data structure, 151
definition, 143
delaunay, 163, 168
duality, 167
generalized, 189
graph, 146
interpolation, 173
naive, 161
natural entities, 145
of a curve, 220
of a manifold, 219
of a surface, 221
properties, 144
validity, 144
weighted, 187
unfolding a surface, 270, 272, 311
valence of a vertex, 224
volume (of a tetrahedron), 370
VORONOI
diagram, 166
weighted diagram, 187