

# Index

A	
achievement goal . . . <i>see</i> goal, achievement, <i>see also</i> plan, body, achievement goal	
action . . . 2, 19, <i>see also</i> plan, body, action, 49	
environment . . . . . 82, 103	
feedback . . . . . 82	
internal . . . . . 84, 139, 140, 231	
standard . . . . . 54, 139, 168	
user defined . . . . . 139	
actuators . . . . . 2	
agent	
situated . . . . . 101	
state . . . . . 67	
agent architecture . . . . . 31	
Agent Architecture class . . . . . <i>see</i>	
customisation, Agent Architecture class	
Agent class . . . <i>see</i> customisation, Agent class	
agent communication languages . . . . . 26	
agent program . . . . . 31	
agent-oriented programming . . . . . 17	
annotations . . . . . 34	
nested . . . . . 38	
applicable plan . . . . . <i>see</i> plan, applicable	
applicable plan selection function . . . . .	
. . . . . <i>see</i> selection function, option	
arguments . . . . . 34	
arity . . . . . 34	
atom . . . . . 33	
attitudes . . . . . 16	
autonomy . . . . . 2	
B	
Backtracking Declarative Goal pattern (BDG) . . . . . 171, 176, 257	
BC . . . . . <i>see</i> Blind Commitment pattern	
BDG <i>see</i> Backtracking Declarative Goal pattern	
BDI programming . . . . . 166	
belief . . . . . 5, 15, 19, 26, 32, 32, 144, 166	
initial . . . . . 8, 11, 39, 67	
shared . . . . . 137	
belief base . . . . . 32, 67, 140	
customisation <i>see</i> customisation, belief base	
belief revision function . . . . . 22, 144, 146	
belief update function . . . . . 69, 144, 146	
belief updates . . . <i>see</i> plan, body, mental notes	
Blind Commitment pattern (BC) 173, 177, 257	
body . . . . . <i>see</i> plan, body	
brf . . . . . 71	
buf . . . . . 69	
C	
capabilities . . . . . 228	
checkMail . . . . . 71	
closed world assumption . . . . . 36	
commisives . . . . . 26	
commitment strategy . . . . .	
. . . . . <i>see</i> goal, commitment strategy	
communicated information . . . . . 36	
communication . . . . . 25	
configuration file . . . . . 93	
conjunctive goals . . . . . 227	
constants . . . . . 33	
context . . . . . <i>see</i> plan, context	
courses of action . . . . . 81	
customisation . . . . . 145, 151, 155, 233	
Agent Architecture class . . . . . 140, 151	
Agent class . . . . . 140, 145	
belief base . . . . . 140, 155	

- customisation (*continued*)
- relational database . . . . . 157
  - text persistent . . . . . 156
  - pre-processing directives . . . . . 140
- D**
- declarations . . . . . 26
- declarative goal . . . . . *see* goal, declarative
- Declarative Goal pattern (DG) . . . 171, 176, 256
- default literals . . . . . 46
- deliberation . . . . . 18
- design patterns . . . . . 170
- desire . . . . . 15, *see also* goal, 166
- DG . . . . . *see* Declarative Goal pattern
- directives . . . . . 25
- include . . . . . 160
- dropping goals . . . . . *see* goal, dropping
- E**
- EBDG . . . . . *see* Exclusive BDG pattern
- effectors . . . . . 2, 81, 82
- environment . . . . . 2, 101, 231
- Model-View-Control design
    - pattern . . . . . 109
- event . . . . . 9, 42, 70, 72, 144
- addition . . . . . 42
  - deletion . . . . . 42
  - discarded . . . . . 74
  - external . . . . . 70, 72, 74, 78, 90
  - initial . . . . . 67
  - internal . . . . . 70, 78, 82, 166
  - pending . . . . . 144
  - selected . . . . . 73
  - set of . . . . . 67, 73
  - triggering . . . . . 73
- event selection function . . . . .
- . . . . . *see* selection function, event
- Exclusive BDG pattern (EBDG) . . . 172, 177, 257
- execution modes . . . . . 96
- expressions . . . . . *see* plan, body, expressions
- expressives . . . . . 26
- extensibility . . . . . 139
- F**
- fact . . . . . 34
- focus of attention . . . . .
- . . . . . *see* intention, focus of attention
- folk psychology . . . . . 16
- functor . . . . . 34
- G**
- goal . . . . . 5, 10, 19, 23, 27, 40, 40, 166
- achievement . . . . . 40, 82, 165, 166
  - commitment strategy . . . . . 166, 173
  - declarative . . . . . 40, 41, 165, 170, 171
  - dropping . . . . . 167
  - initial . . . . . 8, 12, 41, 67
  - maintenance . . . . . 165, 166, 175
  - procedural . . . . . 41
  - test . . . . . 40, 83, 123
- goal-based programming . . . . . 166
- goal-directed . . . . . 4
- ground . . . . . 33
- H**
- head . . . . . *see* plan, head
- heterogeneous agents . . . . . 123
- I**
- illocutionary force . . . . . 25, 117
- initial belief . . . . . *see* belief, initial
- initial goal . . . . . *see* goal, initial
- intended means . . . . . 78
- intention . . . . . 15, 18, 19, 78, 80, 144, 166
- clearing . . . . . 86
  - empty . . . . . 70
  - focus of attention . . . . . 79, 82
  - new . . . . . 79
  - set of . . . . . 67, 78
  - suspended . . . . . 49, 50, 82, 83, 85
- intention selection function . . . . .
- . . . . . *see* selection function, intention
- intention stack . . . . . 24
- intention-that . . . . . 166
- intention-to . . . . . 166
- intentional stance . . . . . 16
- intentional system . . . . . 16
- internal action . . . . . *see also* plan, body,
- internal action, *see also* action, internal
  - abolish . . . . . 250
  - add\_annot . . . . . 251
  - add\_plan . . . . . 242
  - atom . . . . . 248
  - at . . . . . 251

broadcast ..... 237  
concat ..... 239  
count ..... 252  
create\_agent ..... 252  
current\_intention ..... 244  
date ..... 253  
desire ..... 245  
drop\_all\_desires ..... 245  
drop\_all\_events ..... 245  
drop\_all\_intentions ..... 246  
drop\_desire ..... 246  
drop\_event ..... 246  
drop\_intention ..... 247  
fail\_goal ..... 247  
fail ..... 253  
findall ..... 253  
ground ..... 249  
intend ..... 247  
kill\_agent ..... 254  
length ..... 239  
list ..... 249  
literal ..... 249  
max ..... 240  
member ..... 240  
min ..... 241  
my\_name ..... 238  
nth ..... 241  
number ..... 250  
perceive ..... 254  
plan\_label ..... 243  
random ..... 254  
relevant\_plans ..... 243  
remove\_plan ..... 244  
send ..... 238  
sort ..... 241  
stopMAS ..... 254  
string ..... 250  
structure ..... 250  
substring ..... 242  
succeed\_goal ..... 248  
time ..... 254  
wait ..... 255  
interpreter configuration ..... 94

**K**

knowledge level ..... 5, 26

**L**

list ..... 34  
literal ..... 32, 105  
logical consequence ..... 43, 75  
logical variable ..... *see* variable

**M**

maintenance goal ..... *see* goal, maintenance  
Maintenance Goal pattern (MG) 175, 177, 258  
MAS configuration ..... 148  
means-ends reasoning ..... 18  
mental notes ..... 36, 52, 84, 107  
message feedback ..... 82  
meta-level plans ..... 24  
MG ..... *see* Maintenance Goal pattern  
modalities of truth ..... 32  
model checking ..... 230  
multi-agent interaction ..... 25  
multi-agent system ..... 5

**N**

negation  
as failure ..... 36  
strong ..... 36

**O**

Open-Minded Commitment pattern  
(OMC) ..... 174, 177, 257  
option selection function .....  
..... *see* selection function, option  
options ..... 21, 24, 78  
organisations ..... 228

**P**

parallel goals ..... 227  
perceive ..... 69  
percept ..... 35, 69, 103  
individualised ..... 69  
negative ..... 105  
positive ..... 105  
perceptual information ..... 35  
performative ..... 54, 117  
performative verb ..... 26  
perlocutionary force ..... 25  
plan ..... 4, 5, 8, 19, 39-41, 41, 144, 167  
applicable ..... 43, 55, 75, 91, 93, 167  
set of ..... 74, 76

- plan (*continued*)
- body . . . . . 23, 41, 43, 48, 81
    - achievement goal . . . . . 50
    - action . . . . . 49
    - expressions . . . . . 55, 85
    - internal action . . . . . 53
    - mental notes . . . . . 52
    - test goal . . . . . 51
  - context . . . . . 9, 23, 41, 42, 46, 75
  - contingency . . . . . 87
  - failure . . . . . 87
    - cascading . . . . . 93
  - head . . . . . 41
  - library . . . . . 67, 73
  - pattern . . . . . 170
  - relevant . . . . . 42, 73, 83, 87, 90, 93, 126, 167
    - set of . . . . . 74
  - triggering event . . . . . 9, 41, 42, 43
    - achievement-goal addition . . . . . 44
    - achievement-goal deletion . . . . . 44
    - belief addition . . . . . 44
    - belief deletion . . . . . 44
    - test-goal addition . . . . . 44
    - test-goal deletion . . . . . 44
  - planner . . . . . 19
  - planning . . . . . 19
  - post-condition . . . . . 23
  - practical reasoning . . . . . 17, 39
  - pre-condition . . . . . 23
  - pre-processing directives . . . . . *see* customi-  
sation, pre-processing directives, 165
  - predicate . . . . . 32
  - pro-attitudes . . . . . 18
  - procedural goal . . . . . *see* goal, procedural
  - project file . . . . . 93
  - property . . . . . 32
  - propositional content . . . . . 26
- R**
- rational balance . . . . . 20
  - rational behaviour . . . . . 165
  - reactive . . . . . 2, 4
  - reactive planning systems . . . . . 31
  - reasoning cycle . . . . . 32, 67
  - reasoning directed towards actions . . . . . 17, 39
  - reconsidering . . . . . 22
  - Relativised Commitment pattern (RC) . . . . . 177, 257
  - relevant plan . . . . . *see* plan, relevant
  - representatives . . . . . 25
  - responsive . . . . . 4
- S**
- $\mathcal{S}_E$  . . . . . *see* selection function, event
  - selected event . . . . . *see* event, selected
  - selection function . . . . . 55, 67, 71, 80, 144, 232
    - applicable plan . . . . . *see* selection function, option
    - event . . . . . 73, 226
    - intention . . . . . 80
    - message . . . . . 71
    - option . . . . . 78
  - semantics . . . . . 27
  - sensors . . . . . 2
  - Sequenced Goal Adoption pattern (SGA) . . . . . 175, 178, 258
  - SGA . . . . . *see* Sequenced Goal Adoption pattern
  - $\mathcal{S}_I$  . . . . . *see* selection function, intention
  - Single-Minded Commitment pattern (SMC) . . . . . 173, 177, 257
  - SMC . . . . . *see* single-minded commitment pattern
  - $\mathcal{S}_O$  . . . . . *see* selection function, option
  - SocAcc . . . . . 71, 72
  - social acceptance function . . . . . 71, 144
  - social simulation . . . . . 101
  - society . . . . . 36
  - state . . . . . *see* agent, state
  - structure . . . . . 34
- T**
- temporal logic . . . . . 230
  - term . . . . . 34
  - terminology . . . . . 27
  - test goal . . . . . *see* goal, test, *see also* plan, body, test goal
  - theoretical reasoning . . . . . 39
  - triggering event . . . . . *see* plan, triggering event
  - trust function . . . . . 144
- U**
- unification . . . . . 33, 55, 73
  - user customisation . . . . . *see* customisation
  - utilities . . . . . 24

V

variable . . . . .	33	scope . . . . .	33
binding . . . . .	33	uninstantiated . . . . .	33
free . . . . .	33	veracity . . . . .	38
instantiation . . . . .	33	verification . . . . .	230