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LIST OF SYMBOLS AND ABBREVIATIONS

Symbols

B	-	Base rotation increment
E	-	Elbow rotation increment
T_e	-	End Effector Transformation Matrix
θ_i	-	Joint Angle
Q_i	-	Joint Angle in LabVIEW
a_i	-	Link Length
A_i	-	Link Length in LabVIEW
d_i	-	Link offset
D_i	-	Link offset in LabVIEW
S	-	Shoulder rotation increment
${}_0T^5$	-	Transformation Matrix
α_i	-	Twist Angle
W	-	Wrist rotation increment
a_x	-	X Component of Approach Vector
a_{xg}	-	X Component of Approach Vector of goal
n_x	-	X Component of Normal Vector
n_{xg}	-	X Component of Normal Vector of goal
o_x	-	X Component of Orientation Vector
o_{xg}	-	X Component of Orientation Vector of goal
p_x	-	X Component of Position Vector
p_{xg}	-	X Component of Position Vector of goal
a_y	-	Y Component of Approach Vector
a_{yg}	-	Y Component of Approach Vector of goal
n_y	-	Y Component of Normal Vector
n_{yg}	-	Y Component of Normal Vector of goal
o_y	-	Y Component of Orientation Vector

o_{yg}	-	Y Component of Orientation Vector of goal
p_y	-	Y Component of Position Vector
p_{yg}	-	Y Component of Position Vector of goal
a_z	-	Z Component of Approach Vector
a_{zg}	-	Z Component of Approach Vector of goal
n_z	-	Z Component of Normal Vector
n_{zg}	-	Z Component of Normal Vector of goal
o_z	-	Z Component of Orientation Vector
o_{zg}	-	Z Component of Orientation Vector of goal
p_z	-	Z Component of Position Vector
p_{zg}	-	Z Component of Position Vector of goal

Abbreviations

ACL		Advanced Control Language
ADE	-	Application Development Environment
ANN	-	Artificial Neural Network
ANFIS	-	Adaptive Neuro-Fuzzy Inference System
ATS	-	Advance Terminal Software
CIIKM	-	Complete Iterative Inverse Kinematic Method
CPU	-	Central Processing Unit
D-H	-	Denavit and Hartenberg
DDK	-	Driver Development Kit
DOF	-	Degrees of Freedom
EOAT	-	End of Arm Tooling
FKA	-	Forward Kinematics Analysis
FKM	-	Forward Kinematics Model
GPC	-	Generalized Predictive Control
GPCL	-	Generalized Predictive Control with learning
GUI	-	Graphical User Interface
IKA	-	Inverse Kinematics Analysis
IKM	-	Inverse Kinematics Model
ILC	-	Iterative Learning Control

ISO	-	International Standard Organization
LABVIEW	-	LABoratory Virtual Instrument Engineering Workbench
PA	-	Path Analysis
PAM	-	Path Analysis Model
PIIKM	-	Partial Iterative Inverse Kinematic Method
PTP	-	Point To Point
RA	-	Reachability Analysis
RAM		Reachability Analysis Model
RBF	-	Radial Basis Function
RNN	-	Random Neural Network
TCP	-	Tool Center Point or Tool of Gripper
UCS	-	User Coordinate Systems
VI	-	Virtual Instrument
WA	-	Workspace Analysis
WAM	-	Workspace Analysis Model
WCS	-	World Coordinate Systems
XML	-	Extensible Markup Language