Matrix Command

Operation	Matlab Command	Example	help
Sum of Matrix	`+`	`C=A+B`	
Difference of Matrix	–	`C=A-B`	
Product of Matrix	`*`	`C=A*B`	mtimes
Matrix power	`^`	`C=A^b`	mpower
Solve the system $Ax = b$	`\`	`x=A\b`	mldivide
Solve the system $xA = b$	`/`	`x=b/A`	mrdivide
Transpose	`.'`	`tA=A.'`	transpose
Get the Eigenvalues and Eigenvectors matrices Λ, Ψ of the generalized eigenvalue problem $A\Psi = B\Psi\Lambda$)	`eig()`	`[Psi,L]=eig(A,B)`	eig
Complex conjugate transpose	`'`	`tA=A'`	ctranspose
Inverse of Matrix A	`inv()`	`IA=inv(A)`	inv
Determinant of Matrix A	`det()`	`dA=det(A)`	
Rank of Matrix A	`rank()`	`rA=rank(A)`	
Get Diagonal of A	`diag()`	`b=diag(A)`	
Make Diagonal matrix A from vector b	`diag()`	`A=diag(b)`	
Make Unitary NxN Diag. matrix	`eye()`	`A=eye(N)`	
Make Unitary NxM matrix	`ones()`	`A=ones(N,M)`	
Make Zeros NxM matrix	`zeros()`	`A=zeros(N,M)`	

Array Command (Element By Element)

Array Product $A_{ij} \cdot B_{ij}$	`.*`	`C=A.*B`	times
Array left divide A_{ij}/B_{ij}	`.\`	`C=A.\B`	ldivide
Array right divide A_{ij}/B_{ij}	`./`	`C=B./A`	rdivide

Table 1 – Basic Matrix and Array Operations