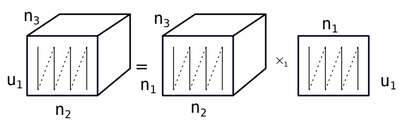
TTM (Contiguous Memory), p>2, 1<=m<=p, m = pi[1]

A : First-Order, m : 1

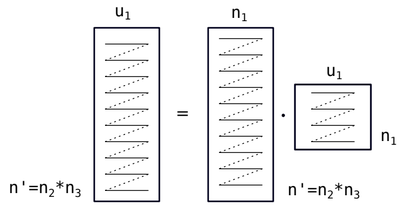
Storage Format of Matrix-Multiply (MM)

pia = [1,2,3], m = 1, pib = [1,2] ops = n'(2n_1-1)

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_1,n_1),C,(u_1,n_2,n_3))



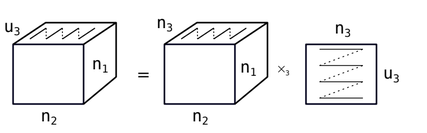
MM(Row,A,(n',n_1),B,(n_1,u_1),C,(n',u_1))



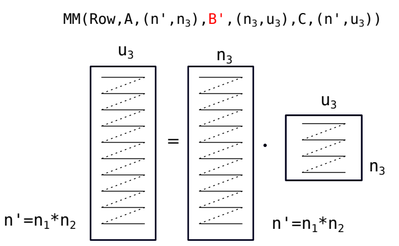
B : Col-Major
MM : Row-Major

pia = [1,2,3], m = 1, pib = [2,1] ops = n'(2n_m-1)

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_1,n_1),C,(u_1,n_2,n_3))



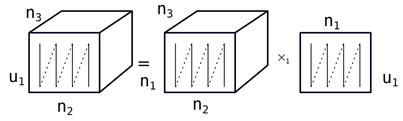
MM(Row,A,(n',n_1),B',(n_1,u_1),C,(n',u_1))



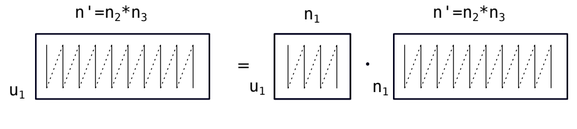
B : Row-Major
MM : Row-Major

pia = [1,2,3], m = 1, pib = [1,2] ops = n'(2n_1-1)

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_1,n_1),C,(u_1,n_2,n_3))



MM(Col,B,(u_1,n_1),A,(n_1,n'),C,(u_1,n'))



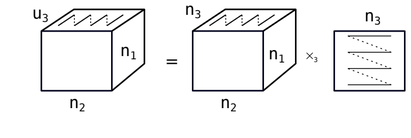
B : Col-Major
MM : Col-Major

Storage Format of B

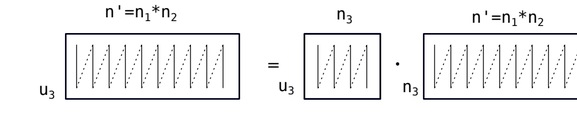
B : Row-Major
MM : Col-Major

pia = [1,2,3], m = 1, pib = [2,1]

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_1,n_1),C,(u_1,n_2,n_3))



MM(Col,B',(u_1,n_1),A,(n_1,n'),C,(u_1,n'))

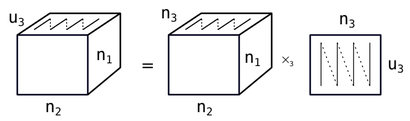


A : Last-Order, m : 3

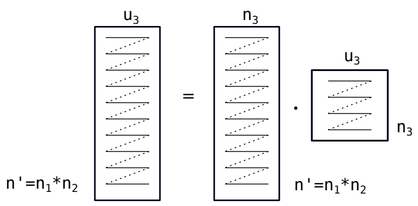
Storage Format of Matrix-Multiply (MM)

pia = [3,2,1], m = 3, pib = [1,2]

TTV(pia,pib, A,(n_1,n_2,n_3),B,(u_3,n_3),C,(n_1,n_2,u_3))



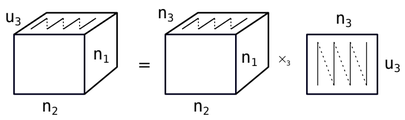
MM(Row,A,(n',n_3),B,(n_3,u_3),C,(n',u_3))



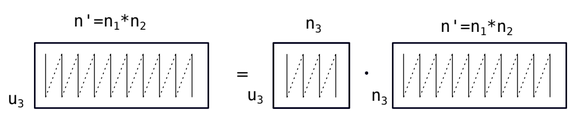
B : Col-Major
MM : Row-Major

pia = [3,2,1], m = 3, pib = [1,2]

TTV(pia,pib, A,(n_1,n_2,n_m),B,(n_3,n_m),C,(n_1,n_2,n_3))



MM(Col,B,(u_3,n_3),A,(n_3,n'),C,(u_3,n'))



B : Col-Major
MM : Col-Major

Storage Format of B

B : Row-Major
MM : Row-Major

pia = [3,2,1], m = 3, pib = [2,1] ops = n'(2n_3-1)

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_3,n_3),C,(n_1,n_2,u_3))

MM(Row,A,(n',n_3),B',(n_3,u_3),C,(n',u_3))

B : Row-Major
MM : Row-Major

pia = [3,2,1], m = 3, pib = [2,1]

TTV(pia,pib, A,(n_1,n_2,n_3),B,(u_3,n_3),C,(n_1,n_2,u_3))

MM(Col,B',(u_3,n_3),A,(n_3,n'),C,(u_3,n'))

B : Row-Major
MM : Col-Major