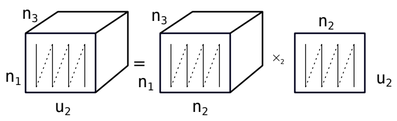
TTM (Contiguous Memory), p>2, 1<=m<=p, m != pi[1], m != pi[p]

A : First-Order, m : 2

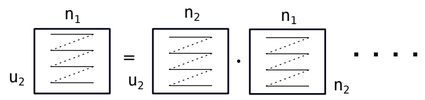
Storage Format of Matrix-Multiply (MM)

pia = [1,2,3], m = 2, pib = [1,2] ops = n'(2n_2-1)

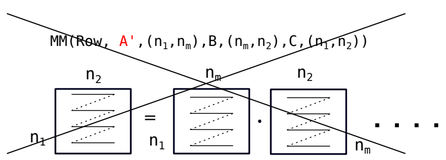
TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_2,n_2),C,(n_1,u_2,n_3))



MM(Row,B',(u_2,n_2),A,(n_2,n_1),C,(n_2,n_1))



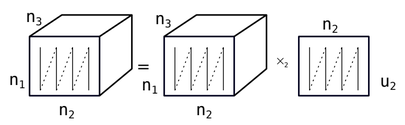
~~MM(Row, A',(n_1,n_m),B,(n_m,n_2),C,(n_1,n_2))~~



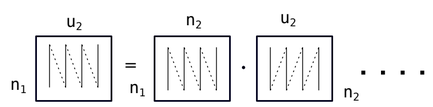
B : Col-Major
MM : Row-Major

pia = [1,2,3], m = 2, pib = [1,2] ops = n'(2n_2-1)

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_2,n_2),C,(n_1,u_2,n_3))



MM(Col,A,(n_1,n_2),B',(n_2,u_2),C,(n_1,u_2))



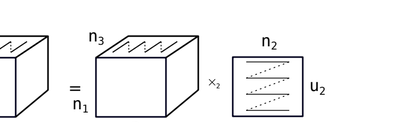
B : Col-Major
MM : Col-Major

Storage Format of B

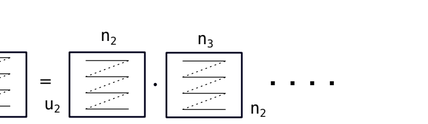
B : Row-Major
MM : Row-Major

pia = [1,2,3], m = 2, pib = [2,1] ops = n'(2n_2-1)

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_2,n_2),C,(n_1,u_2,n_3))

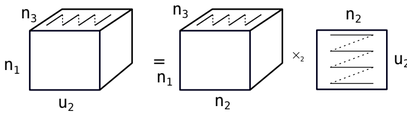


MM(Row,B,(u_2,n_2),A,(n_2,n_1),C,(u_2,n_1))

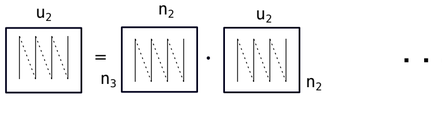


pia = [1,2,3], m = 2, pib = [2,1]

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_2,n_2),C,(n_1,u_2,n_3))



MM(Col,A,(n_1,n_m),B,(n_2,u_2),C,(n_1,n_2))

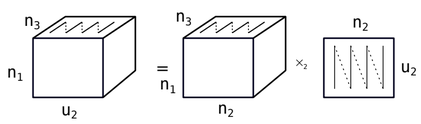


A : Last-Order, m : 2

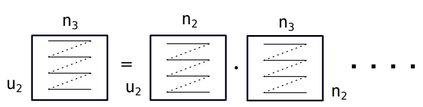
Storage Format of Matrix-Multiply (MM)

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

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



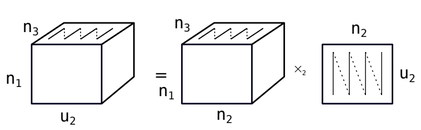
MM(Row,B',(u_2,n_2),A,(n_2,n_3),C,(u_2,n_3))



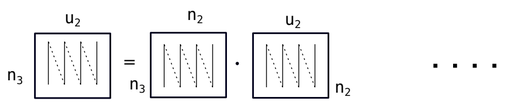
B : Col-Major
MM : Row-Major

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

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_2,n_2),C,(n_1,u_2,n_3))



MM(Col,A,(n_3,n_2),B',(n_2,u_2),C,(n_3,u_2))



B : Col-Major
MM : Col-Major

Storage Format of B

B : Row-Major
MM : Row-Major

pia = [3,2,1], m = 2, pib = [2,1] ops = n'(2n_2-1)

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_2,n_2),C,(n_1,u_2,n_3))

MM(Row,B,(u_2,n_2),A,(n_2,n_3),C,(u_2,n_3))

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

TTM(pia, pib, A,(n_1,n_2,n_3),B,(u_2,n_2),C,(n_1,u_2,n_3))

MM(Col,A,(n_3,n_2),B,(n_2,u_2),C,(n_3,u_2))

B : Row-Major
MM : Col-Major