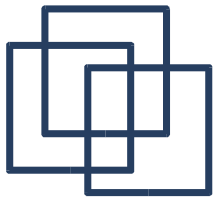


Computing Polynomials

- How to compute polynomials like $\sum_{i=0}^{n} a_i x^i$
- How to take advantage of some *multiply and accumulate* instructions on DSPs.
- Rewrite as $a_0 + x(a_1 + x(a_2 + \ldots x(a_n)\ldots))$
- Compute with

$a := a_n$

$a := a_{n-1} + x*a$

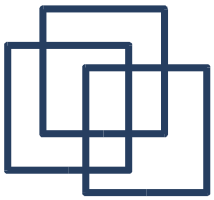
...

$a := a_1 + x*a$

$a := a_0 + x*a$

Algorithm:

a:=ai[n]

while(n>0) a:=ai[--n]+x*a

return a