

$$A = X B X^{-1}$$

$$A u = \lambda u$$

$$X B X^{-1} u = \lambda u \rightarrow$$

$$X^{-1} X B (X^{-1} u) = \lambda (X^{-1} u)$$

$$B (X^{-1} u) = \lambda (X^{-1} u)$$

$v = (X^{-1} u)$ is the eigenvector

$$p(t) = a_0 + a_1 t + \dots + a_k t^k$$

$$p(A) = a_0 I + a_1 A + \dots + a_k A^k$$

$$A u = \lambda u \rightarrow$$

$$A^{-1} A u = \lambda A^{-1} u \rightarrow$$

$$u = \lambda A^{-1} u \rightarrow (1/\lambda) u = A^{-1} u$$

\rightarrow eigenvalue is $1/\lambda$

$$A B u = \lambda u$$

if $\lambda = 0$ is eigenvalue of $A B$ then it is also an

e.v. of $BA =$ why?

$$\det(AB) = \det(BA) \rightarrow \text{true}$$

if $\lambda \neq 0$

$$A B u = \lambda u \rightarrow$$

$$B A (B u) = \lambda (B u) \rightarrow$$

$\lambda =$ eigenvalue of BA with associated eigenvector

$$B u - \lambda u \neq 0$$

vandermonde

$$V a = ?$$

component i

$$a_0 + a_1 x_i + a_2 x_i^2 + \dots + a_n x_i^n$$

solving $V a = y$

means? interpolation