For class CP (ME?) - Characteristic Polynomial
- Multiplicity & Eigenvalues

Tuesday Problem Session
#11 via email by Noon tomorrow

Thursday Matrices / LT upgrade

Friday - BYOB Art

There is a sequence of nested $A$-invariant subspaces
\[ U = \left\langle x_1, x_2, \ldots, x_n \right\rangle \]

\[ A S = S T \]

\[ A \begin{bmatrix} x_1 & \cdots & x_n \end{bmatrix} = \begin{bmatrix} x_1 & \cdots & x_{n-1} \end{bmatrix} ^\top \]

\[ A \hat{S} = \hat{S} ^\top \Rightarrow \quad A^n \hat{S} = \hat{S} (\hat{T} ^n) \]

Claim: \( \dim (U \cap N(A^n)) = \dim (N(\hat{T} ^n)) \)

\[ \dim = n-1 \quad \text{topping out} \Rightarrow \quad \dim (N(\hat{T} ^{n-1})) = \dim (N(\hat{T} ^n)) \]

\[ T - X I \] has 0 as a diagonal entry and eigenvalue