· Razpišimo formulo

$$\det(A-xI)I = (A-xI)(\widetilde{A-xI})^T$$

$$\| \qquad\qquad \| \qquad\qquad \|$$

$$(c_0+c_1x+\dots+c_nx^n)I \qquad \underbrace{(A-xI)\,(B_0+B_1x+\dots+B_{n-1}x^{n-1})}$$

$$\|$$

$$\cancel{c_0I}+\cancel{c_1Ix}+\dots+c_nIx^n = \cancel{AB_0}+\cancel{AB_1}x+AB_2x^2+\dots+AB_{n-1}x^{n-1}$$

$$-\cancel{xB_0}-x^2B_1-\dots-B_{n-2}x^{n-1}-B_{n-1}x^n$$

Primerjamo koeficiente pri istih potencah

$$c_0I = AB_0 \Rightarrow c_0I = \cancel{AB_0}$$

$$A\}\ c_1I = AB_1-B_0 \Rightarrow c_1A = \cancel{A^2B_1}-\cancel{AB_0}$$

$$\vdots$$

$$A^{n-1}\}\ c_{n-1}I = AB_{n-1}-B_{n-2} \Rightarrow c_{n-1}A^{n-1} = \cancel{A^nB_{n-1}}-\cancel{A^{n-1}B_{n-2}}$$

$$A^n\}\ c_nI = -B_{n-1} \Rightarrow c_nA^n = -\cancel{A^nB_{n-1}}$$

$$c_0I+c_1A+\dots+c_{n-1}A^{n-1}+c_nA^n = 0$$

seštejemo vse enačbe

To je ravno $p_A(A)$

Dokazali smo, da $p_A(x)=\det(A-xI)$ anihilira matriko A.