ugurkan ates
numerical analysis HW 2 PDF part 2
151044012 *GTU computer engineering*

$$A=\begin{bmatrix} A_{11} & A_{12} & A_{33} \\ A_{21} & A_{21} & A_{44} \\ 0 & 0 & 1 \end{bmatrix}\begin{bmatrix} x \\ y \\ 1 \end{bmatrix}=\begin{bmatrix} x' \\ y' \\ 1 \end{bmatrix}$$

noktalar $[1,2][2,2]$

$$X=\begin{bmatrix} A_{11} & A_{12} & A_{33} \\ A_{21} & A_{21} & A_{44} \\ 0 & 0 & 1 \end{bmatrix}\begin{bmatrix} 1 \\ 2 \\ 1 \end{bmatrix}=\begin{bmatrix} 2 \\ 2 \\ 1 \end{bmatrix}$$

denklem cozulunce alttaki
halini alir
buluruz.

$$a_{11}+2a_{12}+a_{13}=2$$
$$a_{21}+2a_{22}+a_{23}=2$$

ikinci noktalar
$[2,1][-1,4]$

$$X=\begin{bmatrix} A_{11} & A_{12} & A_{33} \\ A_{21} & A_{21} & A_{44} \\ 0 & 0 & 1 \end{bmatrix}\begin{bmatrix} 2 \\ 1 \\ 1 \end{bmatrix}=\begin{bmatrix} -1 \\ 4 \\ 1 \end{bmatrix}$$

bunu cozunce
alttaki
donusum yapilir

$$a_{11}+2a_{12}+a_{13}=-1$$
$$a_{21}+2a_{22}+a_{23}=4$$

son noktalarimizi yazinca
$[3,1][-4,4]$

$$X=\begin{bmatrix} A_{11} & A_{12} & A_{33} \\ A_{21} & A_{21} & A_{44} \\ 0 & 0 & 1 \end{bmatrix}\begin{bmatrix} 3 \\ 1 \\ 1 \end{bmatrix}=\begin{bmatrix} -4 \\ 4 \\ 1 \end{bmatrix}$$

$$3a_{11}+a_{12}+a_{13}=-4$$
$$3a_{21}+a_{22}+a_{23}=4$$

$$a_{11}+2a_{12}+a_{13}=2$$
$$2a_{11}+a_{12}+a_{13}=-1$$
$$3a_{11}+a_{12}+a_{13}=-4$$

$$a_{21}+2a_{22}+a_{23}=2$$
$$2a_{21}+a_{22}+a_{23}=4$$
$$3a_{21}+a_{22}+a_{23}=4$$

alttaki denklemde bilinen degerleri koyup bilinmeyen kokleri buluyoruz

$$\begin{bmatrix}1&2&1\\2&1&1\\3&1&1\end{bmatrix}\begin{bmatrix}a_{11}\\a_{12}\\a_{13}\end{bmatrix}=\begin{bmatrix}2\\-1\\-4\end{bmatrix} \qquad \begin{bmatrix}1&2&1\\2&1&1\\3&1&1\end{bmatrix}\begin{bmatrix}a_{11}\\a_{12}\\a_{13}\end{bmatrix}=\begin{bmatrix}2\\4\\4\end{bmatrix}$$

bilinmeyen degerleri koyunca son bilinmeyenleride buluyoruz .

$$a_{11}=-3\,a_{12}=0\,a_{13}=5$$
$$a_{21}=0\,a_{22}=-2\,a_{23}=6$$

Suan yeni matriximiz var $\begin{bmatrix}-3&0&5\\0&-2&6\\0&0&1\end{bmatrix}$

X ' i tersini alip yerine koydumuzda denklemi cozmus oluruz

$$¿¿-1=\begin{bmatrix}-1/3&0&5/3\\0&-1/2&3\\0&0&1\end{bmatrix}$$