

Minimization (continued)

The system determining x_1 and x_2 can be written:

$$\begin{bmatrix} | & | \\ a_1 & a_2 \\ | & | \end{bmatrix}^T \begin{bmatrix} | & | \\ a_1 & a_2 \\ | & | \end{bmatrix} x = \begin{bmatrix} | & | \\ a_1 & a_2 \\ | & | \end{bmatrix}^T b$$

That is

$$A^T A x = A^T b \quad (\text{i.e just multiply } Ax = b \text{ by } A^T)$$

We will see in the next part of these notes that the same linear system arises in general.