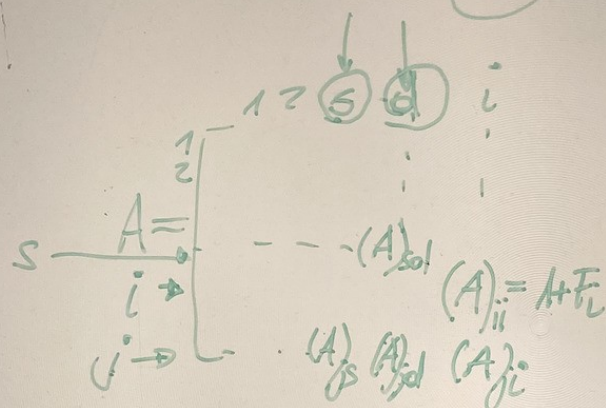
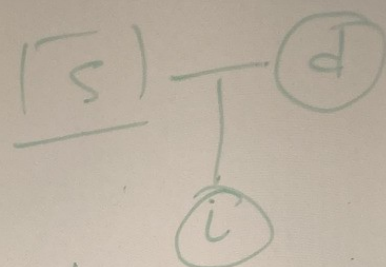


• Parents s and d of animal i



$$F_i = \frac{1}{2} (A)_{sd}$$

$$(A)_{ji} = \frac{1}{2} (A)_{js} + \frac{1}{2} (A)_{jd}$$

$$\begin{aligned} \text{Meaning of } (A)_{ji} &= \frac{\text{cov}(u_j, u_i)}{\bar{u}^2} ; \text{ with } u_i = \frac{1}{2} u_s + \frac{1}{2} u_d + u_i \\ &= \frac{\text{cov}(u_j, [\frac{1}{2} u_s + \frac{1}{2} u_d + u_i])}{\bar{u}^2} = \frac{\text{cov}(u_j, \frac{1}{2} u_s) + \text{cov}(u_j, \frac{1}{2} u_d)}{\bar{u}^2} \end{aligned}$$