$$c_{a,u} = \frac{\operatorname{covar}(r_a, r_u)}{\sigma_{r_a}\sigma_{r_u}}$$

$$\operatorname{covar}(r_a, r_u) = \frac{\sum_{i=1}^{m}(r_{a,i} - \bar{r}_a)(r_{u,i} - \bar{r}_u)}{m}$$

$$\bar{r}_x = \frac{\sum_{i=1}^{m} r_{x,i}}{m}$$

$$\sigma_{r_x} = \sqrt{\frac{\sum_{i=1}^{m}(r_{x,i} - \bar{r}_x)^2}{m}}$$

$$w_{a,u} = s_{a,u}c_{a,u}$$

$$s_{a,u} = \left\{ \begin{matrix} 1 \text{if } m > 50 \\ \frac{m}{50} \text{ if } m \le 50 \end{matrix} \right\}$$

$$p_{a,i} = \bar{r}_a + \frac{\sum_{u=1}^{n} w_{a,u}(r_{u,i} - \bar{r}_u)}{\sum_{u=1}^{n} w_{a,u}}$$