**Step 1: Estimate the Step 2: Defining the Step 3: Autoregressive Layer Base Distribution** marginal Tail Indices with a data-driven Linearity **Employ Tail Index** Rearranging Flexible Base **Autoregressive Tail-dependent Marginals Transformation** structured **Estimators Distribution Linear Layer** Light- $|\mathbf{z}_1 \sim \mathcal{N}(0, 1)|$ **Tailed Target**  $\mathbf{z_2} \sim \mathrm{t}_{\hat{
u}_2}(0,1)$ **Distribution** Tail index  $\mathbf{z_3} \sim \mathcal{N}(0, 1)$  $\hat{\nu}_2$ Light-**Tailed** Tail index  $\hat{\nu}_{\mathbf{D}}$  $\mathbf{z_D} \sim \mathrm{t}_{\hat{
u}_{\mathbf{D}}}(0,1)$