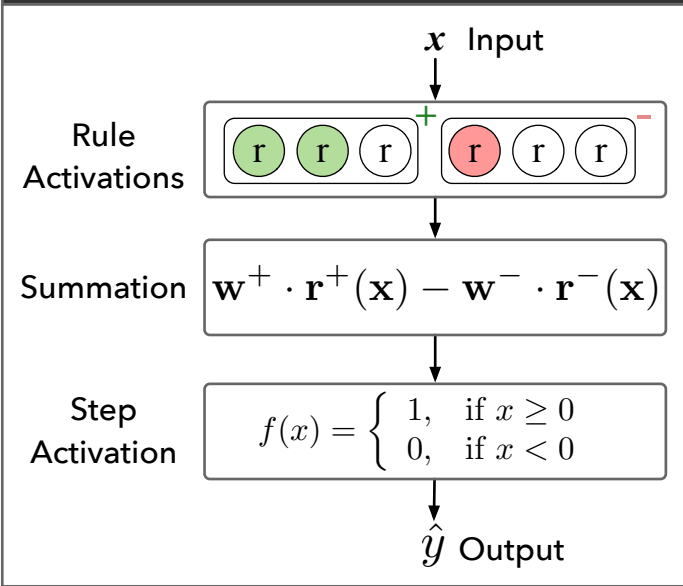
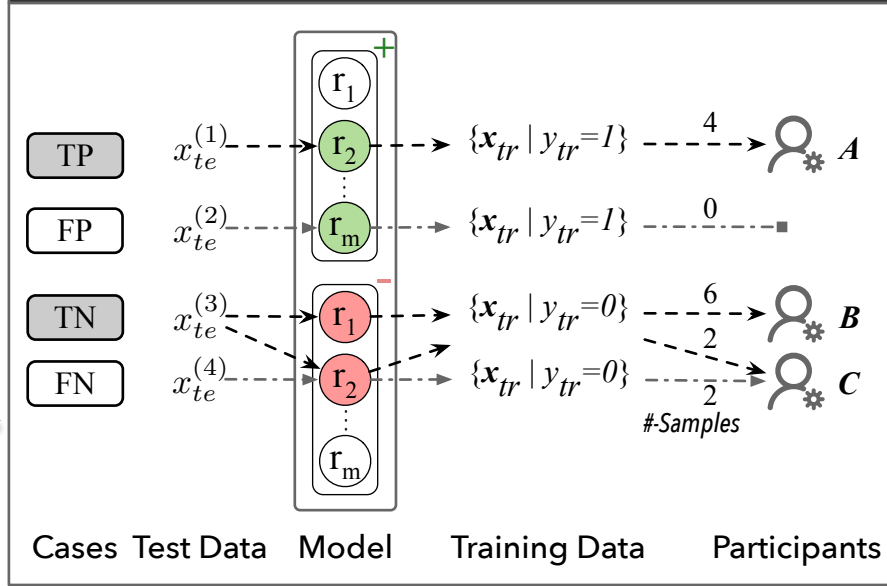


(a) Rule-based Model



(b) Contribution Tracing via Activated Rules



(d) Micro Contribution

$$\phi_v^m(A) = \frac{1}{4} * \frac{4}{4} = \frac{1}{4}$$

$$\phi_v^m(B) = \frac{1}{4} * \frac{6}{6+2} = \frac{3}{16}$$

$$\phi_v^m(C) = \frac{1}{4} * \frac{2}{6+2} = \frac{1}{16}$$

weighted on
data volume

Contribution Allocation

replication-robust
averaging

(c) An Example Task and Its Classification Rules

Example Task: High (+) and low (-) Income Prediction, 3 participants with 4 test records

Rules: $r_1^+ : \text{capital-gain} > 21k$ $r_2^+ : \text{edu-years} > 15 \wedge \text{work} - \text{class} = \text{state-gov}$

$r_1^- : \text{capital-gain} < 5k$ $r_2^- : \text{work-hours} > 14 \vee \text{marital-status} = \text{never}$

(e) Macro Contribution

$$\phi_v^M(A) = \frac{1}{4} * \frac{1}{1} = \frac{1}{4}$$

$$\phi_v^M(B) = \phi_v^o(C) = \frac{1}{4} * \frac{1}{2} = \frac{1}{8}$$