?
A
$A \in$
A
$\Gamma(A) \subset$
A
A
$A \setminus$
$(\{A\} \cup$
$\Gamma(A))$
$\exists x :$
$A \xrightarrow{}$
$(0,1):$

$$\forall A \in A : \Pr[A] \leq x(A) \prod_{B \in \Gamma(A)} (1 - x(B))$$

$$\Pr(\cap_{A \in A} \overline{A}) \geq \prod_{A \in A} (1 - x(A))$$

??
?
i
$\Pr\left(A| \cap_{B \in S} \overline{B}\right) \leq$
$x(A) \, \forall S \subset$
$\mathcal{A}, A \notin$
S
S
$S =$
ϕ
$\Pr(A_i) \leq$
$x(A_i)$
A
$S_1 =$
$S \cap$
$\Gamma(A), S_2 =$
$S S_1$

$$\Pr\left(A| \cap_{B \in S} \overline{B}\right) = \frac{\Pr\left(A \cap \cap_{B \in S_1} \overline{B}| \cap_{B \in S_2} \overline{B}\right)}{\Pr\left(\cap_{B \in S_1} \overline{B}| \cap_{B \in S_2} \overline{B}\right)}$$

$S_1 =$
$\{B_{j1}, B_{j2}, \ldots, B_{jl}\}$
A
S_2

$$Numerator \leq \Pr\left(A| \cap_{B \in S_2} \overline{B}\right) = \Pr(A) \leq x(A) \prod_{B \in \Gamma(A)} (1 - x(B))$$

(1)

$$Denominator = \Pr\left(\overline{B}_{j1}| \cap_{t=2}^{l} \overline{B}_{jt} \cap_{B \in S_2} \overline{B}\right) \cdot \Pr\left(\overline{B}_{j2}| \cap_{t=3}^{l} \overline{B}_{jt} \cap_{B \in S_2} \overline{B}\right) \cdot \ldots \ldots \cdot \Pr\left(\overline{B}_{jl}| \cap_{B \in S_2} \overline{B}\right) \geq \prod_{B \in S_1} (1 - x(B))$$

(2)
$|S|$
??
??

$$\Pr\left(A| \cap_{B \in S} \overline{B}\right) \leq x(A) \prod_{B \in \Gamma(A) - S_1} (1 - x(B)) \leq x(A)$$

$$\Pr\left(\overline{A}| \cap_{B \in S} \overline{B}\right) \geq$$
$1 -$
$x(A)$

$$\Pr\left(\overline{A_1} \cap \ldots \cap \overline{A_n}\right) = \Pr\left(\overline{A_1}|\overline{A_2} \cap \ldots \overline{A_n}\right) \cdot \Pr\left(\overline{A_2}|\overline{A_3} \cap \ldots \overline{A_n}\right) \cdot \ldots \cdot \Pr\left(\overline{A_n}\right) \leq \prod_{A \in \mathcal{A}} (1 - x(A))$$

??
?

The
same
proof
has
been
added
by
me
in