

# Logique et $\lambda$ -calcul

## Cours du M1 STIC ISC

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On définit  $\neg A$  comme  $A \Rightarrow \perp$ .

$$\frac{}{\Gamma \vdash A} (\text{Ax(i)}) \text{ si } \Gamma_i = A \qquad \frac{\Gamma, A \vdash B}{\Gamma \vdash A \Rightarrow B} (\Rightarrow I) \qquad \frac{\Gamma \vdash A \Rightarrow B \quad \Gamma \vdash A}{\Gamma \vdash B} (\Rightarrow E)$$

$$\frac{\Gamma \vdash A \quad \Gamma \vdash B}{\Gamma \vdash A \wedge B} (\wedge I) \qquad \frac{\Gamma \vdash A \wedge B}{\Gamma \vdash A} (\wedge E_1) \qquad \frac{\Gamma \vdash A \wedge B}{\Gamma \vdash B} (\wedge E_2)$$

$$\frac{\Gamma \vdash A}{\Gamma \vdash A \vee B} (\vee I_1) \qquad \frac{\Gamma \vdash B}{\Gamma \vdash A \vee B} (\vee I_2) \qquad \frac{\Gamma \vdash A \vee B \quad \Gamma, A \vdash C \quad \Gamma, B \vdash C}{\Gamma \vdash C} (\vee E)$$

$$\frac{}{\Gamma \vdash \neg} (\neg I) \qquad \frac{\Gamma \vdash \perp}{\Gamma \vdash A} (\perp E)$$

$$\frac{\Gamma \vdash A}{\Gamma \vdash \forall x. A} (\forall I) \text{ si } x \notin \Gamma \qquad \frac{\Gamma \vdash \forall x. A}{\Gamma \vdash A[x \mapsto t]} (\forall E)$$

$$\frac{\Gamma \vdash A[x \mapsto t]}{\Gamma \vdash \exists x. A} (\exists I) \qquad \frac{\Gamma \vdash \exists x. A \quad \Gamma, A \vdash B}{\Gamma \vdash B} (\exists E) \text{ si } x \notin \{\Gamma, B\}$$