

# Linear Everywhere Dependent Type Theory (LEDTT)

**Every variable must be used:**

Let  $\Gamma \vdash t : B$ . For every  $x : A \in \Gamma$  then either  $x \in \text{FV}(\Gamma)$  or  $x \in \text{FV}(t)$  or  $x \in \text{FV}(B)$ .

**Linearity across judgments:**

Let  $\Gamma \vdash t : B$ . For every  $x : A \in \Gamma$  then  $x$  appears only once in  $\Gamma$ , or only once in  $t$ , or only once in  $B$ .

# Linear Everywhere Dependent Type Theory (LEDTT)

## Variable localization:

Let  $\Gamma \vdash t : B$ . For every  $x : A \in \Gamma$  then the following holds:

- If  $x \in \text{FV}(\Gamma)$ , then  $x \notin \text{FV}(t)$
- If  $x \in \text{FV}(t)$ , then  $x \notin \text{FV}(\Gamma)$