OPLSS-218-Foundations-day4

Saturday, July 7, 2018 9:08 AM

7/7/2018 9:12 AM

Linear Logic

- Logic & Programing Languages: propositions and type.
- It's all about behaviors

Curry-Howard Correspondences

- Proofs as programs
- Propositions as Types

Programming	Logic
Functions	Implications ("if")
Product types	Conjunction ("and")
Sum types	Disjunction("or")
STLC	Intuitionistic logic
Simple type, λ-calculus	
polymorphism	Forall, 2nd order logic
Control-flow	Classical logic
Combination calculus	Hibert logic
Dependent types	1st-order logic

What is linear logic? 7/7/2018 11:11 AM Beef...-_->

7/7/2018 2:14 PM

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	T, Z H T Axiom
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Linear Logic	- C propostitions, things can ha thrup
West of the second	Tr, Tr, Tr, Tr, Trn
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Admissible Studium	I + T (weakening) I, T, T + I condition I + D weakening right
vules	1,7-6
	conjuntation right
	Sequent Gludus Trz, D
	ins reject above in zero one "
Conjunction	
binary	Γ, τ, & C, +Δ [, τ, & α + Δ]] T 1 Γ+τ, Δ Γ+τ & β ρ γ γ γ γ γ δτ τ, Θτ τ, δτ
propositions	
	1 1 d Q CL / A
	$\frac{1}{1} + \frac{1}{1} + \frac{1}{1} = \frac{1}$
D	
Disjunction	$\Gamma \vdash G \cdot \Delta \qquad \oplus R_1 \qquad \Gamma \vdash G \cdot \Delta \qquad \oplus R_2$ $\Gamma \vdash C_1 \oplus C_2 \cdot \Delta \qquad \Gamma \vdash C_1 \oplus C_2 \cdot \Delta$
	[1] 사용 보는 사람들이 가장 중요 그리고 있다면 다른 다른 사람들이 되었다면 되었다면 하는 사람들이 되었다면 하는 사람들이 되었다면 하는데 되었다면 되었다면 하는데 되었다면 하는데 되었다면 되었다면 되었다면 하는데 되었다면 되었다면 되었다면 되었다면 되었다면 되었다면 되었다면 되었다면
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And the second second	

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	THIATR TOOK OR ME THE
	T,OF A THU, A
	beef, bunf burger potato, oil - fries OR 1 ton two things. I -
	beef, bun , potato, oil - burger & fries mandatory two things. I -
	beef, Oil + 15 tomato, CHam 1- tomato succe - OP
	tomato, Cream Homato soup & chinoodle soup
	Main = burgers & fries "or" ? disjunction mans
	Main = burgers & fires soup of the day "or" or disjunction means Soup = tomato soup ⊕ ch modele soup the meaning of ⊕ and ⊕
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	Strawb, banana - fruit salad & soomthie
	lunch = main & soup & dessert
	ingred = beef, bun, potato, oil, tomato, cream, stranb, banda (multiple ingredients)
	ingred + lunch ingred + lunch Mix
- Anthropy	ingred, in gred + lunch &, lunch
	ingred, ingred Hunch & lunch
Mix	THA THA'
A.	$\Gamma,\Gamma'\vdash\Delta,\Delta'$ \vdash^{2},γ^{2} \vdash^{2} \vdash^{2}
Negation	The state of the s
J	$(\tau, \lambda \tau) = \tau' \oplus \tau' \qquad (\tau, \theta \tau)' = \tau' \lambda \tau'$
Links and the second	$(\tau_1 \otimes \tau_2)^{\perp} = \tau_1^{\perp} \vartheta \tau_2^{\perp} \qquad (\tau_1 \vartheta \tau_2)^{\perp} = \tau_1^{\perp} \otimes \tau_2^{\perp}$
	74 = 0 0 = 7
Tlanom:	$\gamma = T^{\perp \perp} 7\zeta = \zeta \rightarrow 0$
Theorem:	

	하게 하는데 된 집 집 집에 집에 다른데는 그렇게 돼요? 뭐 되었다. 그리고 그렇게 되는데 그렇게 하는데 그렇게 되는데 그리고 있다.
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2	
Theorem Co. VIII	0 2 - 14 0 d d d d d d d d d d d d d d d d d d
moore a chalif	y) if T + \(is derivable then \(A + \tau^1 \) is, too.
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linear 7-colons	The start Sale of Sales of Sal
	$\gamma_{\chi}: \zeta(\chi, \chi): \gamma \rightarrow \gamma \otimes \zeta$
	Z:= T10/1 12, -0 [: 1] τ . Γ . Λ ⊢ e: τ Γ ; Δ, χ: τ + e' ε τ'
	10, & Tilt. @ Tilt. @ Tilt. & Tilt. A, A' Het x=e in e': T'
	그 젊은 그리고 그렇게 그는 것이 없는 이번에 가야 하는 것은 맛이 많아 되었습니까 그리고 있다면 하는 것이 없는 그는 것이다.
	T: A - P: 7 CType checking
	T; A Le: 7 Citype checking
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l/c	in-linear linear 1d Tix. 7; - + x.7 1d
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I/c	TIDHEIT FIXEL TIMES TO TO TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL
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	Theorem where T in the first T is the T in
	The linear linear Id^{2} I
	The linear linear linear T_{1} T_{2} T_{3} T_{4} T_{5} $T_{$
	Figure Sinear Id Tight 1 The
	In-linear hinear Id^{1} $\Gamma_{1} \wedge \Gamma_{2} + \Gamma_{3} \wedge \Gamma_{4} + \Gamma_{5} \wedge \Gamma$

	TIAHRIA TIAHRIA
	TIAHEIR TIAHBIR TIAHEIROR FIXIXIA, Y: RIFE': Z'
	$T:\Delta \vdash \{t\Rightarrow e_1, \gamma\Rightarrow e_2\}: TdT_2 \qquad T:\Delta,\Delta' \vdash ase e of (x,y)\rightarrow e': C'$
Linear Arrow	Τ; Δ. x: z+e: 7' Γ; +e: T - 0 7' Γ; Δ'+e': 2
	T; Δ+7xx·τe: τ-στ' T; A, Δ'+e e': τ'
	네 경기가 되는 사진 속성을 다시되는 생활이 가지하면 이동소 없이 했어? 나라가 있다면 나라 시험을 들면서 목록 생활하고 이미를 받아 되었다.
	T; Are: T; e: 1 7 Tx: 7; Fe: 7'
	Γ ; \vdash many e : Γ ; α se e of many $x \Rightarrow e'$: T'
<u> </u>	I; Are: 0
P P	[; D+ {}: T F: D+ ase e of s3: Z
	T; Ate: T; Ate: T
	T; + <7:1 T; Δ,Δ' μ ase e of < 7 ≥ e': C
Dynamics.	reduction rules
	V:= <> (V,V> L·V Y·V 2x:ze {b=e, r=e} {}
	[many V
	let x=vine H> e IV/x] (7x.e)V H> e IV/x]
3 2	{P=Pe, Y=> ez} (→e, non-linedy e'.z'
	case (. Vof(.x ⇒ e, r.y ⇒ e,] → e, [/x] if [; . +e: Z and [, x:Z;]+
	case < U, V270+ < X, Y>>> e -> e [1/x, 1/y] then
1	ase many V of $x \Rightarrow e \mapsto e[\sqrt{x}]$ $/ [;a' \mapsto e'[e/x];7']$
Lemma Gubstitut	
	· linear. T; A He: Z and T; A', 7: THE', T
	then $\Gamma; \Delta, \Delta' \in [e/x]: T'$