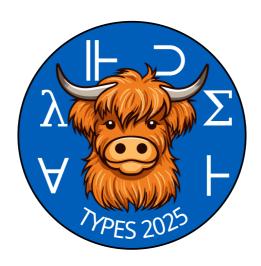
# 31<sup>st</sup> International Conference on Types for Proofs and Programs

# **TYPES 2025**



University of Strathclyde, Glasgow, Scotland, 9–13 June 2025











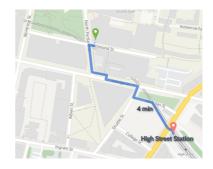
# Social events

# Monday 9 June: Welcome reception Livingstone Tower

The welcome reception will take place on level 11 of Livingstone Tower with views over Glasgow. Livingstone Tower is located next to the conference venue.

# Wednesday 11 June: Excursion to Loch Lomond

Wednesday afternoon we will go on a boat trip on Loch Lomond. To get there, we will take trains from the nearby *High Street* station to the village of Balloch. We will go in two groups: one leaving at 14:39, and one leaving at 15:09. Check the back of your name badge to see which group you have been assigned.



# Thursday 12 June: Conference dinner Grosvenor Cafe

The conference dinner will take place in the Grosvenor Cafe (pronounciation: grow-when-er, /ˈgɹəʊ.və.nə(ɪ)/) in Ashton Lane in the West End of Glasgow. A convenient way to get there is to take the subway from  $Buchanan\ Street$  to Hillhead— either the inner or outer circle works (but inner will be quicker). The dinner will start at 19:30.



# MSP's Guide to Glasgow

# Sights, Museums and Parks

In particular we recommend a walk through the Necropolis followed by a visit to the Cathedral.

- The Necropolis. Glasgow's City of the Dead is close to the conference venue, and offers nice views of the city.
- Glasgow Cathedral. Medieval; the oldest building in Glasgow.
- St Mungo Museum of Religious Life and Art. Close to the Cathedral and Necropolis.
- Glasgow Green. Large green space by the river Clyde.
- Kelvingrove Art Museum (Kelvingrove Park). Art/natural history/natural/history museum, well worth a visit. Has a Dalí painting, and is located in a nice park.
- University of Glasgow and the Hunterian Gallery. The other university in Glasgow has a nice campus, and the oldest museum in Scotland.
- Glasgow Botanic Gardens.
- The Burrell Collection (Pollok Park). A varied collection of art and history. Is located in a nice park, including highland cattle.
- $\bullet$  Queen's Park. Nice view of Glasgow from the flag pole.
- Gallery of Modern Art.
- The Riverside Museum. Award-winning transport and technology museum.
- Glasgow Science Centre.
- The Clydeside Distillery. The closest whisky distillery.
- The Tenement House. Discover what life was like in Glasgow 100 years ago.
- Sharmanka Kinetic Theatre. A unique experience.
- Glasgow mural trail. Nice walk in the city centre.

19:00-20:00		18:00-19:00		17:00-18:00			16:00-17:00			15:00-16:00			14:00-15:00				13:00-14:00		12:00-13:00				11:00-12:00		10:00-11:00				9:00-10:00	8:30-9:00	Time (BST)	
	Welcane reception Livings are flower, level 11		Adapi T.: A Type Theory with Punctorial Types Arthu-dool, Pathad Inquests, Mon Lemon Eretard Kept Melled		An algebraic internal groupoidal model of Martin- Lof type theory case hopes			A Type Theory for Comprehension Categories with Applications to Subtyping Version Mysels, Mai we der Weite Resold deven, Days Bendal West, Martin, Mai we der Weite Resold deven, Days Bendal	Directed equality with dinaturality  Andrea Lantin, Franc Langua, Mondo 14844	Synthetic-Inductive Category Theory and Assesses	Dependent two-sided fibrations for directed type thoury	Coffee break	down Watters	Yoperty for Syntax	Appl Grangeles, West Keite  Categorical Normalization by Evaluation: A	Thinning Thinnings: Safe and Efficient Binders	Presheaves on Purpose	Expansion in a Calculus with Explicit Substitu- tions done-drough dender Atea, Misio Revide	Lamen		Löb's Theorem and Procability Predicates in Rooq Anni Fasta, Invarish Kira, Newed Fanter		Mechanicing, logical relations Austin Peret	Coq proof of the fifth Busy Boaver value Fram Son, & Madery Oddarska	A Coq Bermalization of Lagois Connections for Secure Information Flow Couper 886 Lian desiliber, Real Spilot Name, Dancy Ingent Perlan	Coffee break	Examples and counter-examples of injective types in univalent mathematics  Ten at Ann Metri Bando	In Cantor Space, No One Can Hear You Stream Meets Makes Assa Makes Press Meets Paled	Accessible Sets in Martin-Löf Type Theory with Function Extensionality Yes Stateday	Towards topological type theory for decrypting transfinite northods in class tool mathematics topological and the mathematics to the standards of the standards	Registration and Coffee	Monday 9 <sup>th</sup> June
				Discussion on gender balance issues	Break	Remark Leidenve	Type Theory of Acyclic and Cyclic Algorithms	Rossoning with strict symmetric monoidal categories in Agak total demotiv		Why Types: Natural Structures of Mind or Artifi- cial Formal Tools?	Coffee break		Base French	Ecumenical logic	and processing section of the sectio	MidPN Opening and Welcome	Constructive algebraic completeness of first-order	Type Theory and Philosophical Logic tree free factors	LAUXCE		Rock Completions For (Elementary). Topoi Kote Festivot, No. in ser der Frank	Yet another homotopy group, yet another Brunerie number	Cocompleteness in simplicial homotopy type the- ory Reset Outer, Ameter Heatopy, Ura Bratists	Predicative Stone Duality in Univalent Foundations done Town Meta Basels	About the construction of simplicial and cubical sets in induced form to the following description of the construction of the	Codke break	голи разменення у со жина ў сурев Такан Авайна, Аван Харая	phism total Great	oing Sort Frogranopasia with I ba, Jdees Boan, Medies Soon, Neda 7- bas for Immredicative Universe	and Varia	Code	Tuesday 10 <sup>th</sup> June
								Execution Balcol, Lock Lower									Internal Proofs of Strong Normalization	Towards a computational quantum logic	LAUCE		Matching (Coppatterns with Cyclic Proofs	Towards Quotient Industive Types in Observa- tional Type Theory  Theory National Nation 7 States	Weak Equality Reflection in MLTT with Proposi- tional Truncation	Arrow algebras	How (not) to prose typed type conversion transi- tive how Long	Coffee break	Commuting Rules for the Later Modality and Quantifiers in Step-Indexed Logics Biller Reads, Relater Medical	Monadic Equational Ressoning for while loop in Rocq grap Kenderal Joyan Garrige, Toleford Schem, Republ 4,00-60	Higher-Order Focusing on Linearity and Effects	Intuitionistic modalities through proof theory tens tens	Cedice	Wednesday 11 <sup>th</sup> June
Conference Dinner					Business Meeting		$Y$ is not typable in $\lambda U$ thrown Green, top Points in	A Curry-Howard correspondence for intuitionistic impuisitive logic to train, to Processe	A Generalized Logical Pramework	An existential-free theory of arithmetic in all fi- nite types	Canonical Bidirectional Typing via Polarised Systems Harmonical Bidirectional Typing via Polarised Systems Harmonical Polarised Polarised Systems (No. 1974) (1974)	Coffee break	Oracl Milloren, More Antolog, Janus Capress	de Ku J.Pay, Wass Streets	Detection Redesier for Reseats, Africa Percofesia, At cut Socia Rair Termination for Resource-Aware Active Ob-	Romalising Monitors for Distributed Deadlock	Verifying Z3 RUP Proofs with the Interactive Theorem Provers Coq/Rooq and Agda  More Prove Coq/Rooq and Agda  More Provers Control Secretary Adds Agda  Mark Prove Control Secretary Control Secretary  Mark Prove Contr	A Timed Predicate Temporal Logic Sequent Cal- culus  have Beque Menton den Spright Henry Bolt	Limen		A Two-level Foundation for the Calculus of Con- structions  Proc. Astro.	Implementing a Typechecker for an Esoteric Language: Experiences, Challenges, and Lessons	Towards Being Positively Negative about Dependent Types An & Major & Major	Code Generation via Meta-programming in De- pendently Typed Proof Assistants Meta-Research Depth, Norwick Protes	Type-safe Bidirectional Channels in Idris 2	Coffee break	Towards Modular Composition of Inductive Types Using Lean Meta-programming	Choice principles and a cotopological modality in $\operatorname{HolTY}_{\operatorname{Osc} Mirro}$	Compositional memory management in the $\lambda$ -calculus $\frac{\lambda}{\lambda_0}$ retains the Matter Matter $\lambda_0$ retains the training of the second second $\frac{\lambda}{\lambda_0}$ retains $\frac{\lambda}{\lambda$	A Guided Tour of Polarity and Recusing on Acoustic	Coffee	Thursday 12 <sup>th</sup> June
			Lightweight Agels Formalization of Denotational Semantics	Extensional concepts in intensional type theory, revisited house, to the party topology	Representing type theories in two-level type theory  Ory  Montal Num., Reviet Army	Cohomology in Symhetic Stone Duality  May Memolog, Theory Oquind Hits Cherdon, Food Gordon	Broak	Solving, Guarded Domain Equations in Presheaves Over Ordinals and Mechanizing It	Leant Lean: Mechanizing the Metatheory of Lean $_{\it Merit Circuits}$	Towards Formalising the Guard Checker of Rocq biodan 7an Yanasi Rentor	BUTTLean: Formalising the Meta-Theory of BUTT in Lean	Coffee break	MERT Types At one Francisco, Nat. Incom.	Med Olans, Perry Systems, Adjana Strategies  Large Ellimination and Indexed Types in Refine-	In Proc. Gods Prodo  Containers: Compositionality for Tensors	Weihrauch Problems as Containers	An Industive Universe for Setoids	Stellar - A Library for API Programming	LLIDER		A Quantitative Dependent Type Theory with Re- cursion One Delinon, Mr. Anders Developes, Andreas Add	Unboxed Dependent Types  Gustartes Teacture	NbE for LNL via Adjoint Meta-modalities	Impredientive Encodings of Inductive and Coinductive Types Arran Gaussa, Met van der Heids, Soon Benand	Linear Types inside Dependent Type Theory  Marsdon Ree	Coffee break	Efficient Program Extraction in Elementary Number Theory using the Proof Assistant Minlog Pennites Planet	A Fully Dependent Assembly Language Many Jeony Jeony Jeony Jeony Jeony	A Gloost Sort for Proof-Relevant yet Erased Data in Bocq and MetaBocq John Bouth Method Sona, The West Solder	A constructive higher groupoid model of home- topy type theory	Codice	Friday 13 <sup>th</sup> June

# MSP's Guide to Glasgow, continued

## Food

Some of our favourites.

#### City Centre

- Paesano Pizza, £
- Sugo Pasta, £
- Merchant Chippy, £
- Shawarma King, £
- Eda, ££
- Bread Meats Bread, ££
- Damasqino, ££
- The Dhabba, ££
- Cafe Gandolfi, ££
- Mosob, ££
- Yiamas Greek, ££
- Dim Sum, ££
- Swadish, ££
- Sarti's, ££

#### West End

- Ottoman Coffee House, £
- The Finnieston, £££
- Mother India, ££
- Ox and Finch, ££
- The Dockyard Social, £
- Roastit Bubbly Jocks, ££
- Time Out Cafe, £
- Zique's, ££
- Ubiquitous Chip, £££
- Ashoka, ££
- Bothy, ££

- Hanoi Bike Shop, ££
- Ka Pao, ££
- Stravaigin, ££

#### East End

- Celentanos, ££
- Sword Sushi, £
- Tibo Bistro, ££
- Dennistoun Bar-B-Que, ££
- WEST Brewery, ££
- The Drygate, ££

#### South Side

- Bar Vini, ££
- The Big Counter, ££
- Ranjit's Kitchen, £
- Kebabish, ££
- Little Hoi An, ££
- Lobo, ££
- The Glad Cafe, ££
- The Rum Shack, ££

## Vegan Specialists

- Mono, ££
- Stereo, ££
- Tapa, £
- Non Viet Vegan, ££
- Suissi Vegan Kitchen, ££
- The Hug and Pint, ££

### Pubs and bars

A curated list of MSP favourites, many alternatives are available.

### City Centre

- The Pot Still, ££ Best pub in Glasgow for Whiskey.
- Babbity Bowster, ££ Live traditional music by regulars on Wednesdays.
- The Press Bar, £
- The Scotia Bar, £ Allegedly the oldest pub in Glasgow.
- The Clutha, £
- The Howlin' Wolf, ££
- The Old Hairdresser's, £
- The Griffin, £

### West End

- Bon Accord, £
- Chinaskis, ££
- Lebowskis, £
- $\bullet\,$  The Sparkle Horse, ££
- Curlers Rest, £
- Inn Deep, ££
- The Belle, £

### East End

- Redmond's, ££
- The Palais, ££
- The Gate, ££
- WEST, ££

### Southside

- The Rose Reilly, £
- The Bell Jar, ££
- The Allison Arms, £
- Church on the Hill, ££

#### Live Music

- Nice N Sleazy
- The Hug and Pint
- Mono
- Stereo
- King Tut's Wah Wah Hut
- Ivory Blacks
- St Luke's and the Winged Ox