Theory and Applications of Behavioural Types (Dagstuhl Seminar 17051)

January 30th – February 3rd 2017

The meeting will end at lunchtime on Friday 3rd.

Programme

The programme is defined for the first half of the seminar: up to Wednesday lunchtime. It consists of short talks and tool demos, with two sessions for discussion in small groups on topics that emerge during the seminar.

Abstracts of talks, and links to download tools, can be found on the seminar website at Dagstuhl.

The programme for the second half of the seminar will be defined during the first half, depending on interests and connections that emerge during the sessions. We will be able to include additional talks and demos if necessary, as well as leaving plenty of time for discussion.

Monday morning

9.00   Welcome from the organisers, and overview of the week

9.10   Lightning introductions: 1 minute each, no slides, one illustrative object

10.00   *Demo session*

10.00   Roland Kuhn   *AkkaTyped with a process DSL*

10.20   Edwin Brady   *Programming with state machines in Idris*

10.40   *Break*

11.10   *Talk / demo session*

11.10   Luís Caires (T)   *Behavioural types, type theory and logic*

11.30   Nicolas Tabareau (T)   *Partial type equivalence for dependent interoperability*

11.50   Alceste Scalas (D)   *Programming protocols with Scribble and Java*

12.10   *Lunch*

Monday afternoon

14.00 *Talk / demo session*

14.00 Gul Agha (T)   *Towards inferring session types*

14.20 Nada Amin (T)   *Effects as capabilities*

14.40 Ivan Lanese (D)   *AIOCJ (choreographies for adaptation)*

15.00 Nicholas Ng (D)   *Static deadlock detection for Go*

15.20 *Break*

16.00 *Talk / demo session*

16.00 Phillip Haller (T)   *Practical affine types and typestate-oriented programming*

16.20 Conor McBride (T)   *Dependent session types: what are you talking about?*

16.40 *Free discussion time*

18.00 *Dinner*

Tuesday morning

9.00   *Talk / demo session*

9.00   Hans Hüttel (T)   *Using session types for reasoning about boundedness in the pi-calculus*

9.20   Hugo Torres Vieira (T)   *Modular choreography*

9.40   Keigo Imai / Shoji Yuen (D) *Session types in OCaml*

10.00   Luca Padovani (D)   *FuSe: session types in OCaml*

10.20   *Break*

10.50   *Talk / demo session*

10.50   Hugo-Andrés Lopez (T)   *Failure-aware protocol programming*

11.10   Konstantinos Sagonas (T)   *Detecting Concurrency Errors of Erlang Programs via Property-based and Systematic Testing*

11.30   Dominic Orchard (D)   *Haskell session type library*

11.50   Garrett Morris (D)   *Session types in Links*

12.10   *Lunch*

Tuesday afternoon

14.00 *Talk / demo session*

14.00 Bob Atkey (T) *Operational and denotational semantics for classical processes*

14.20 Patrick Eugster (T) *Session types for fault-tolerant distributed systems*

14.40 Dimitris Kouzapas (D) *Typechecking Java protocols with Mungo and StMungo*

15.00 Alceste Scalas (D) *Session types in Scala*

15.20 *Break*

16.00 *Talk / demo session*

16.00 Giovanni Bernardi (T) *A meta theory for testing equivalences*

16.20 Adrian Francalanza (T) *Statically detecting (dead)locks in the linear Pi-calculus*

16.40 Luca Padovani (D) *Typestate system*

17.00 Frank Pfenning (T) *Manifest sharing with session types*

17.20 *Free discussion time*

18.00 *Dinner*

Wednesday

9.00   *Discussion: parallel sessions: one group in the Trier room, old building*

(1)   Handling failures and errors in behavioural type systems (Saarbrucken Room)

(2)   Type-safe sessions and practical software development in mainstream languages (Trier Room)

10.15 *Break*

10.50 *Talk / demo session*

10.50 Ronald Garcia (T)   *Gradual typing*

11.10 Peter Thiemann (T)   *Gradual session types*

11.30 Emilio Tuosto (D)   *From communicating machines to graphical choreographies*

11.50 Thomas Hildebrandt (D)   *Tools for DCR graphs*

12.10 *Lunch*

13.30 *Excursion to Trier*

18.00 *Dinner*

Thursday

9.00 *Discussion: parallel sessions: S = Saarbrucken, K = Kaiserslautern*

(1, S) Integrating static and dynamic typing

(2, K) Dependent session types

10.15 *Break*

10.20 Group photo – outside reception

11.00 *Discussion: parallel sessions: S = Saarbrucken, K = Kaiserslautern*

(1, S) Session sharing and races

(2, K) Behavioural types outside the communication domain

12.15 *Lunch*

14.00 *Reporting from discussion sessions*

6 discussions to report, 10 minutes each

15.00 *Planning for Friday morning*

15.20 *Break*

16.00 *Talk / demo session*

16.00 Hernán Melgratti (T)   *Chaperone contracts for sessions*

16.20 Jovanka Pantović (T)   *Precise subtyping*

16.40 Frank Pfenning (D)   *Session types in Concurrent C0*

17.00 *Free discussion time*

18.00 *Dinner*

Friday

9.00   *Discussion: Saarbrucken*

Language standardisation

10.15 *Break*

11.00 *Discussion: parallel sessions: S = Saarbrucken, K = Kaiserslautern*

(1, S)   Funding and future activities

(2, K)   Educational resources and approaches

12.00 *Everyone in Saarbrucken*

Closing remarks

12.15 *Lunch*

END OF SEMINAR