

# Table of Contents

## Section 1: Invited Talks

|                                                                      |   |
|----------------------------------------------------------------------|---|
| Streaming String Transducers .....                                   | 1 |
| <i>Rajeev Alur</i>                                                   |   |
| Unification in Logic .....                                           | 2 |
| <i>Rosalie Iemhoff</i>                                               |   |
| A Symbolic Logic with Exact Bounds for Cryptographic Protocols ..... | 3 |
| <i>John C. Mitchell</i>                                              |   |
| Univalent Foundations of Mathematics.....                            | 4 |
| <i>Vladimir Voevodsky</i>                                            |   |
| Relational Concepts and the Logic of Reciprocity .....               | 5 |
| <i>Yoad Winter</i>                                                   |   |
| Logic in the Time of WWW: An OWL View .....                          | 6 |
| <i>Michael Zakhar'yashev</i>                                         |   |

## Section 2: Contributed Papers

|                                                                            |    |
|----------------------------------------------------------------------------|----|
| A Complexity Question in Justification Logic .....                         | 8  |
| <i>Antonis Achilleos</i>                                                   |    |
| Basic Model Theory for Memory Logics .....                                 | 20 |
| <i>Carlos Areces, Facundo Carreiro, Santiago Figueira, and Sergio Mera</i> |    |
| Partial Realization in Dynamic Justification Logic.....                    | 35 |
| <i>Samuel Bucheli, Roman Kuznets, and Thomas Studer</i>                    |    |
| Hoare Logic for Higher Order Store Using Simple Semantics .....            | 52 |
| <i>Nathaniel Charlton</i>                                                  |    |
| Nominal Lawvere Theories .....                                             | 67 |
| <i>Ranald Clouston</i>                                                     |    |
| Turing Machines on Cayley Graphs .....                                     | 84 |
| <i>Aubrey da Cunha</i>                                                     |    |
| Information Flow on Directed Acyclic Graphs .....                          | 95 |
| <i>Michael Donders, Sara Miner More, and Pavel Naumov</i>                  |    |

|                                                                                                                                           |            |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------|
| The Boyce-Codd-Heath Normal Form for SQL . . . . .                                                                                        | 110        |
| <i>Flavio Ferrarotti, Sven Hartmann, Henning Köhler,<br/>Sebastian Link, and Millist Vincent</i>                                          |            |
| Hybrid Logics and NP Graph Properties . . . . .                                                                                           | 123        |
| <i>Francicleber Martins Ferreira, Cibeles Matos Freire,<br/>Mario R.F. Benevides, Luis Menasché Schechter, and<br/>Ana Teresa Martins</i> |            |
| On the Expressive Power of IF-logic with Classical Negation . . . . .                                                                     | 135        |
| <i>Santiago Figueira, Daniel Gorín, and Rafael Grimson</i>                                                                                |            |
| Concurrent Logic Games on Partial Orders . . . . .                                                                                        | 146        |
| <i>Julian Gutierrez</i>                                                                                                                   |            |
| Dynamic Epistemic Algebra with Post-conditions to Reason about<br>Robot Navigation . . . . .                                              | 161        |
| <i>Alexander Horn</i>                                                                                                                     |            |
| Untestable Properties in the Kahr-Moore-Wang Class . . . . .                                                                              | 176        |
| <i>Charles Jordan and Thomas Zeugmann</i>                                                                                                 |            |
| Characterizing Definability of Second-Order Generalized Quantifiers . . . .                                                               | 187        |
| <i>Juha Kontinen and Jakub Szymanik</i>                                                                                                   |            |
| Countable Version of Omega-Rule . . . . .                                                                                                 | 201        |
| <i>Grigori Mints</i>                                                                                                                      |            |
| Decomposing the Lattice of Meaningless Sets in the Infinitary Lambda<br>Calculus . . . . .                                                | 210        |
| <i>Paula Severi and Fer-Jan de Vries</i>                                                                                                  |            |
| Strong Normalization and Confluence for Reflexive Combinatory<br>Logic . . . . .                                                          | 228        |
| <i>Daniyar S. Shamkanov</i>                                                                                                               |            |
| On Polymorphic Types of Untyped Terms . . . . .                                                                                           | 239        |
| <i>Rick Statman</i>                                                                                                                       |            |
| Querying the Fragments of English . . . . .                                                                                               | 257        |
| <i>Camilo Thorne</i>                                                                                                                      |            |
| Strong Paraconsistency by Separating Composition and Decomposition<br>in Classical Logic . . . . .                                        | 272        |
| <i>Peter Verdée</i>                                                                                                                       |            |
| How Much Expressive Power Is Needed for Natural Language Temporal<br>Indexicality? . . . . .                                              | 293        |
| <i>Igor Yanovich</i>                                                                                                                      |            |
| <b>Author Index . . . . .</b>                                                                                                             | <b>311</b> |