receptions (1: FMICS-AVoCS; 2: iFM) and wine tasting (3)
social dinners (A: ARVI, ALP4IoT, WAO; B: FMICS-AVoCS)
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Search *iFM integrated Formal Methods Conference* in the Play Store or scan this QR-Code to download the **official iFM 2017 android app**:  
1 General Information

Conference and Registration

The registration desk is at the entrance of the Cavallerizza Reale university building, via Verdi 9, and (during the conference) is open every day from 08:15 to 17:30. If you need help, please ask to the PCO Stilema srl people at the registration desk or to one of the people with badge “LOCAL ORGANIZER”.

Coffee breaks and lunches will be served in the first floor of the Rettorato university building, via Verdi 8.

Internet access can be obtained through eduroam (if your home institution is part of the eduroam consortium). Otherwise, please ask at the registration desk.

In the lecture halls there are almost no electrical sockets. From Monday afternoon, the room “Sala Allara” (in via Verdi 8, fist floor), with 40 desks equipped with electrical sockets, will be available to the conference participants.

Chairs are invited to be in the lecture hall at least 10 minutes prior to their session: it is vital that all speakers observe their time allotment and sessions stay on schedule.

Speakers are asked to contact their session chair before the beginning of the sessions.

Participants are requested to wear their personal badge throughout the meeting, as it is the “entrance ticket” to all sessions. It is forbidden to bring food and beverages in the lecture halls and in the “Sala Allara”.

Social Events

Almost all the social events take place within walking distance from the conference venue, except for the iFM social dinner.

FMICS-AVoCS Reception
Monday 19:00-22:00—NH Hotel “Torino Santo Stefano”, Via Porta Palatina, 19.

ARVI, ALP4IoT, WAO Social Dinner (separate registration)
Monday 19:30—Pizzeria “Le Rondini”, Piazza della Repubblica, 1bis/C.

Wine Tasting Event (separate registration, limited availability)
Tuesday 18:30—Enoteca “Vinolento Cantina & Cucina”, Via Corte d’Appello, 13.

FMICS-AVoCS Social Dinner
Tuesday 20:00—Restaurant “Porto di Savona”, Piazza Vittorio Veneto, 2.
iFM Reception

iFM Social Dinner
Thursday 19:30—Restaurant “Al Gufo Bianco”, Corso Dante, 129.
Getting there: walk (40 min from the conference venue) or take the metro from the Porta Nuova stop (in front of the railway station) to Dante stop (700m from the restaurant).

Useful Informations about Torino
The only accepted currency in Italy is euro, but you can find few exchange offices (one is located inside the Porta Nuova railway station). Credit cards are not always accepted, especially for smaller amounts, but POSs are widely available throughout the city. In restaurants and bars it is better to ask in advance for separate bills.

Electrical sockets in Italy are mostly Type L/10 or Type L/16. However, Type F sockets are not uncommon (which are also compatible with Type C and E plugs).

Public transport in Torino is provided by the GTT company, which manages several bus lines and one metro line. Daily passes for 1 to 3 days cost 5.00€, 7.50€, 10.00€; 1-, 5-, 15-ride tickets cost 1.50€, 6.50€, 17.50€. Tickets must be validated when you get on a Bus/Tram and have a validity of 90 minutes (you can change vehicle)—the same ticket is also valid for one metro ride. Real-time information on buses is available on the Telegram bot @gttorari_bot. When traveling by public transport beware of pickpockets.

Torino is in general safe. In suburban areas it is not advisable to walk alone at night; but in central areas it is fine.

The best-known attractions in Torino are the Egyptian Museum and the Cinema Museum which is located in the iconic Mole Antonelliana. Don’t miss the squares, parks, streets and churches while walking in the city center. Take your time to try the Piedmont cuisine. Here we recommend some places for Bicerin, Bignole (Bignè), Chocolate and Ice Cream (for restaurants see the Website or the Android App).

**Bicerin:** Caffè Al Bicerin. Piazza della Consolata 5 [walking distance to iFM venue—just in front of an impressive church, the Santuario della Consolata]

**Bignole (Bignè):** Pasticceria Ghigo. Via Po 52/b [very close to the conference venue]

**Chocolate:** Guido Castagna. Via Maria Vittoria, 27/C [close to iFM venue]

**Ice Cream:** Alberto Marchetti. Via Po 35 bis [very close to iFM venue]

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## 2 Program Overview

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<td>Entrance</td>
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<td>Lunches, coffee breaks</td>
<td>Coffee break area</td>
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<td>Opening Plenary</td>
<td>Sala Multifunzione 1</td>
<td>Cavallerizza Reale</td>
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<tr>
<td>(Monday, 8:45-9:00)</td>
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<td>Paola Pisano</td>
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<td>Deputy Mayor for Innovation</td>
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<td>and Smart City at the City</td>
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<td>of Turin</td>
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<td>iFM</td>
<td>Aula Magna della Cavallerizza</td>
<td>Cavallerizza Reale</td>
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<td>FMICS-AVoCS</td>
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<td>ARVI [participation is by</td>
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<td>ALP4IoT and WAO</td>
<td>Aula Magna del Rettorato</td>
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<tr>
<td>(09:00-10:00)</td>
<td>Sala Principe d'Acaja</td>
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<td>(10:30-17:30)</td>
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<td>FVAV</td>
<td>Aula Magna del Rettorato</td>
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<td>PrePost</td>
<td>Sala Principe d'Acaja</td>
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<td>Sala Multifunzione 1</td>
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<tbody>
<tr>
<td>08:15 - 08:45</td>
<td><strong>Registration</strong></td>
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<td>08:45 - 09:00</td>
<td>Opening Plenary</td>
<td>iFM Opening</td>
<td>iFM Keynote I: André Platzer</td>
<td>iFM Keynote II: Jane Hillston</td>
<td>iFM Keynote III: Martin Vechev</td>
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<td>09:00 - 10:00</td>
<td>FMICS-AVoCS, ARVI, ALP4IoT</td>
<td>FMICS-AVoCS, FVAV, PrePost, PhD-iFM</td>
<td>iFM Session I: Cyber-physical systems</td>
<td>iFM Session IV: Concurrency and distributed systems</td>
<td>iFM Session VII: Verified Software iFM Closing (12:10-12:20)</td>
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<tr>
<td>10:00 - 10:30</td>
<td><strong>Coffee Break</strong></td>
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<tr>
<td>10:30 - 12:10</td>
<td>FMICS-AVoCS, ARVI, ALP4IoT</td>
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<td>iFM Session VII: Verified Software iFM Closing (12:10-12:20)</td>
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<td>12:10 - 13:40</td>
<td>Lunch</td>
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<td>15:20 - 15:50</td>
<td><strong>Coffee Break</strong></td>
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<td>15:50 - 17:30</td>
<td>ARVI, WAO</td>
<td>FVAV, PrePost, PhD-iFM</td>
<td>iFM Session III: Safety-critical systems</td>
<td>iFM Session VI: Formal Modeling</td>
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<td>FMICS-AVoCS Reception (NH Torino Santo Stefano, 19:00-22:00)</td>
<td>Wine Tasting Event (Vinolento Cantina &amp; Cucina, 18:30-20:30)</td>
<td>iFM Reception (Baratti &amp; Milano, 18:30-20:30)</td>
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<td>iFM Social dinner, award of <strong>best paper</strong> and <strong>best tool paper</strong> Al Gufo Bianco, 19:30</td>
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<tr>
<td></td>
<td>ARVI, ALP4IoT, WAO</td>
<td>FMICS-AVoCS Social dinner, award of <strong>best paper</strong> (Porto di Savona, 20:00)</td>
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**TLT**
Colloquium in honor of Mariangiola Dezani-Ciancaglini, Simona Ronchi Della Rocca and Mario Coppo
(tlt2017.di.unito.it) **[Separate Registration]**
3 iFM Program

Wednesday, September 20th

08:45-09:00  Opening

09:00-10:00  Keynote I (chair: Ana Cavalcanti)

Logic & Proofs for Cyber-Physical Systems with KeYmaera X
André Platzer

10:00 Coffee Break

10:30-12:10  Session I: Cyber-Physical Systems (chair: Einar Broch Johnsen)

An Active Learning Approach to the Falsification of Black Box Cyber-Physical Systems
Simone Silvetti, Alberto Policriti, Luca Bortolussi
Modelling and Verification of Timed Robotic Controllers
Pedro Ribeiro, Alvaro Miyazawa, Wei Li, Ana Cavalcanti, Jon Timmis
Spatial Reasoning about Motorway Traffic Safety with Isabelle/HOL
Sven Linker
Formalising Traffic Rules for Autonomous Vehicles Involving Multiple Lanes in Isabelle/HOL
Albert Rizaldi, Jonas Keinholz, Jochen Feldle, Fabian Immler, Matthias Althoff, Eric Hilgenderdorff, Tobias Nipkow

12:10 Lunch

13:40-15:20  Session II: Software Verification Tools (chair: Carlo Furia)

Making Whiley Boogie!
Mark Utting, David Pearce, Lindsay Groves
Complexity Analysis for Java with AProVE
Florian Frohn, Jürgen Giesl
The VerCors Tool Set: Verification of Parallel and Concurrent Software
Stefan Blom, Saeed Darabi, Marieke Huisman, Wytse Oortwijn
An Extension of the ABS Toolchain with a Mechanism for Type Checking SPLs
Ferruccio Damiani, Michael Lienhardt, Radu Muschevici, Ina Schaefer

15:20 Coffee Break

15:50-17:30  Session III: Safety-Critical Systems (chair: Olaf Owe)

Generalised Test Tables - a Practical Specification Language for Reactive Systems
Bernhard Beckert, Suhyun Cha, Mattias Ulbrich, Birgit Vogel-Heuser, Alexander Weigl
Thursday, September 21th

09:00-10:00  Keynote II (chair: Steve Schneider)

**Integrating Inference with Stochastic Process Algebra Models**
Jane Hillston

10:00 Coffee Break

10:30-12:10  Session IV: Concurrency and distributed systems (chair: Marieke Huisman)

**BTS: A Tool for Formal Component-based Development**
Dalay Israel de Almeida Pereira, Marcel Vinicius Medeiros Oliveira, Madiel Conserva Filho, Sarah Raquel Da Rocha Silva

**Testing and Verifying Chain Repair Methods for CORFU Using Stateless Model Checking**
Stavros Aronis, Scott Fritchie, Kostis Sagonas

**Synthesizing Coalitions for Multi-Agent Games**
Wei Ji, Farn Wang, Peng Wu

**Analysis of synchronisation patterns in stateful active objects**
Ludovic Henrio, Cosimo Laneve and Vincenzo Mastandrea

12:10 Lunch


**Hoare-style Reasoning from Multiple Contracts**
Olaf Owe, Toktam Ramezanifarkhani, Elahe Fazeldehkordi

**A New Invariant Rule for the Analysis of Loops with Non-standard Control Flows**
Dominic Steinhöfel, Nathan Wasser

**Triggerless Happy: Intermediate Verification with a First-Order Prover**
Yuting Chen, Carlo A. Furia

**SemSlice: Exploiting Relational Verification for Automatic Program Slicing**
Bernhard Beckert, Thorsten Bormer, Stephan Gocht, Mihai Herda, Daniel Lentzsch, Mattias Ulbrich
15:50-17:30  Session VI: Formal Modeling (chair: Juliana Bowles)

**VBPMN: Automated Verification of BPMN Processes**  
*Ajay Krishna, Pascal Poizat, Gwen Salaün*

**How well can I secure my system?**  
*Barbara Kordy, Wojciech Widel*

**MaxUSE: A Tool for Finding Achievable Constraints and Conflicts for Inconsistent UML Class Diagrams**  
*Hao Wu*

**Transient and Steady-State Statistical Analysis for Discrete Event Simulators**  
*Stephen Gilmore, Daniel Reijsbergen, Andrea Vandin*

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**Friday, September 22th**

09:00-10:00  Keynote III (chair: Reiner Hahnle)

**Machine Learning for Programming**  
*Martin Vechev*

10:30-12:10  Session VII: Verified Software (chair: Mark Utting)

**Modular Verification of Order-Preserving Write-Back Caches**  
*Jörg Pfähler, Gidon Ernst, Stefan Bodenmüller, Gerhard Schellhorn, Wolfgang Reif*

**Formal verification of ARP (Address Resolution Protocol) through SMT-based model checking - A case study**  
*Danilo Bruschi, Andrea Di Pasquale, Silvio Ghilardi, Andrea Lanzi, Elena Pagani*

**Certified Password Quality - A Case Study Using Coq and Linux Pluggable Authentication Modules**  
*Joao F. Ferreira, Saul A. Johnson, Alexandra Mendes, Phillip J. Brooke*

**Verification of STAR-Vote and Evaluation of FDR and ProVerif**  
*Murat Moran, Dan Wallach*

12:10-12:20  Closing
4  FMICS-AVoCS Program

Monday, September 18th

09:00-09:10  FMICS-AVoCS Opening (Laure Petrucci, Cristina Seceleanu)
09:10-10:00  Keynote I (chair: Cristina Seceleanu)

Replacing Store Buffers by Load Buffers in Total Store Ordering
Parosh Abdulla

10:00 Coffee Break

10:30-11:45  Session I: Automated Verification Techniques (chair: Cristina Seceleanu)

10:30-10:55 Deductive Functional Verification of Safety-Critical Embedded C-Code: An Experience Report
Dilian Gurov, Christian Lidström, Mattias Nyberg, Jonas Westman

10:55-11:20 Verifying Event-Based Timing Constraints by Translation Into Presburger Formulae
Björn Lisper

11:20-11:45 Query Checking for Linear Temporal Logic
Samuel Huang, Rance Cleaveland

12:10 Lunch


13:40-14:05 Automatic Conformance Testing of Safety Instrumented Systems for Offshore Oil Platforms
Hallan W. Veiga, Max H. Queiroz, Jean-Marie Farines, Marcelo L. Lima

14:05-14:30 Model-Based Testing for Asynchronous Systems
Alexander Graf-Brill, Holger Hermanns

14:30-14:55 Information Leakage as a Scheduling Resource
Fabrizio Biondi, Mounir Chadli, Thomas Given-Wilson, Axel Legay

14:55-15:20 A unified formalism for monoprocessor schedulability analysis under uncertainty
Étienne André

15:20 Coffee Break

Tuesday, September 19th

09:10-10:00  Keynote II (chair: Ana Cavalcanti)
Towards Formal Apps: Turning formal methods into verification techniques that make a difference in practice

Kerstin Eder

10:00 Coffee Break

10:30-12:10 Session III, Special Track: Formal Methods for Mobile and Autonomous Robots (chair: Ana Cavalcanti)

10:30-10:55 CRutoN: Automatic Verification of a Robotic Assistant’s Behaviours
Paul Gainer, Clare Dixon, Kerstin Dautenhahn, Michael Fisher, Ullrich Hustadt, Joe Saunders, Matt Webster

10:55-11:20 Sampling-based Reactive Motion Planning with Temporal Logic Constraints and Imperfect State Information
Felipe J. Montana, Jun Liu, Tony J. Dodd

11:20-11:45 Sampling-based Path Planning for Multi-robot Systems with Co-safe Linear Temporal Logic Specifications
Felipe J. Montana, Jun Liu, Tony J. Dodd

11:45-12:10 Certified Gathering of Oblivious Mobile Robots: survey of recent results and open problems
Thibaut Balabonski, Pierre Courtieu, Lionel Rieg, Sébastien Tixeuil, Xavier Urbain

12:10 Lunch


13:40-14:05 Learning Register Automata with Sequence Numbers and Windows of TCP Implementations
Paul Fiterau-Brostean, Falk Howar

14:05-14:30 Optimizing Feature Interaction Detection
Alessandro Fantechi, Stefania Gnesi, Laura Semini

14:30-14:55 Formalising the Dezyne Modelling Language in mCRL2
Rutger van Beusekom, Jan Friso Groote, Paul Hoogendijk, Rob Howe, Wieger Wesselink, Rob Wieringa, Tim Willemse

15:20 Coffee Break

Wednesday, September 20th

09:00-12:10 Tutorial. DIME: Model-based Generation of Running Web applications
(tutors: Tiziana Margaria, Philip Zweihoff)

08:15-10:00: Tutorial first part

10:00 Coffee Break

10:30-12:15: Tutorial second part

12:10 Lunch
5 Satellite Events Program

ARVI (Monday, September 18th)

09:00-10:00  Session I (joint with ALP4IoT)

Asynchronous Software Evolution: Obtaining Type Safety by Combining Type Checking and Runtime Constraints
*Einar Broch Johnsen*

10:00 Coffee Break

10:30-12:10  Session II

Interactive Runtime Verification – when Interactive Debugging meets Runtime Verification
*Raphaël Jakse*

Towards Automated Workload Selection and Benchmark Synthesis from Open-source Code Repositories
*Walter Binder*

Monitoring Decentralized Specifications
*Antoine El-Hokayem*

12:10 Lunch

13:40-14:40  Session III

Exploring the Adoption of Specification Inference Technologies in Industry
*Luke Chircop*

Timed Shield Synthesis
*Florian Lorber*

Runtime Verification of Hard Real-time Systems Properties
*Andre Pedro*

14:40-15:20  Management Committee Meeting (1st part)

15:20 Coffee Break

15:50-17:30  Management Committee Meeting (2nd part)
ALP4IoT & WAO (Monday, September 18th)

09:00-10:00  Keynote I (ALP4IoT)
located with ARVI in room “Aula Magna del Rettorato”

Asynchronous Software Evolution: Obtaining Type Safety by Combining Type Checking and Runtime Constraints
Einar Broch Johnsen

10:00 Coffee Break

10:30-12:10  Session I (ALP4IoT)

IoT Architectural Framework: A review of Connection and Integration Framework for IoT systems
Onoriode Uviase, Gerald Kotonya

Towards Runtime Monitoring of Node.js and Its Application to the Internet of Things
Davide Ancona, Luca Franceschini, Giorgio Delzanno, Maurizio Leotta, Marina Ribaudo, Filippo Ricca

Formalising Sensor Topologies for Target Counting
Sven Linker, Michele Sevegnani

12:10 Lunch

13:40-15:20  Session II (ALP4IoT)

Invited Industrial Talk: IoT Opportunities and Solutions
Cristina Chesta

Aggregate Graph Statistics
Giorgio Audrito, Ferruccio Damiani, Mirko Viroli

Resilient Blocks for Summarising Distributed Data
Giorgio Audrito, Sergio Bergamini

15:20 Coffee Break

15:50-17:30  Session III (WAO)

Keynote II: Testing Shared Resources
Lars-Åke Fredlund

Prototyping Formal System Models with Active Objects
Eduard Kamburjan, Reiner Hähnle

Types for Progress in Actor Programs
Minas Charalambides, Karl Palmskog, Gul Agha
FVAV (Tuesday, September 19th)

09:00-10:00  Keynote

Werner Damm

10:00 Coffee Break

10:30-11:20  Session I: Machine Learning and Probabilistic Systems

Causality-Aided Falsification  
Takumi Akazaki, Yoshihiro Kumazawa, Ichiro Hasuo

Towards Proving the Adversarial Robustness of Deep Neural Networks  
Guy Katz, Clark Barrett, David Dill, Kyle Julian, Mykel Kochenderfer

11:20-12:10  Session II: Agent based Modelling

Game Theory Models for the Verification of the Collective Behaviour of Autonomous Cars  
László Zsolt Varga

A Rational Agent Controlling an Autonomous Vehicle: Implementation and Formal Verification  
Lucas Fernandes, Vinicius Custodio, Gleifer Alves, Michael Fisher

12:10 Lunch


Monitoring of Traffic Manoeuvres with Imprecise Information  
Heinrich Ody

Imperfect Knowledge in Autonomous Urban Traffic Manoeuvres  
Maike Schwammberger

Formal Verification of Autonomous Vehicles: An Isabelle Perspective  
Albert Rizaldi

15:20 Coffee Break

15:50-17:30  Session IV: Modelling and Case Studies

Run-Time Risk Mitigation in Automated Vehicles: A Model for Studying Preparatory Steps  
Mario Gleirscher

Formal Verification of Station Keeping Maneuvers for a Planar Autonomous Hybrid System  
Benjamin Martin, Khalil Ghorbal, Eric Goubault, Sylvie Putot
Lightning talk: use of Formal Models of a Partitioning Hypervisor for Automotive System Level Properties
Sergey Tverdyshev, Holger Blasum

PrePost (Tuesday, September 19th)

09:00-10:00  Keynote I

Hybrid Protocol Conformance Verification for Binary Sessions
Luca Padovani

10:00 Coffee Break

10:30-12:00  Session I

A Story of Parametric Trace Slicing, Garbage and Static Analysis
Giles Reger

A Survey of Runtime Monitoring Instrumentation Techniques
Ian Cassar, Adrian Francalanza, Luca Aceto, Anna Ingolfsdottir

Control-Flow Residual Analysis for Symbolic Automata
Shaun Azzopardi, Christian Colombo, Gordon J. Pace

12:10 Lunch

13:50-14:50  Keynote II

OPE: The Journey to Open Payments, Safely
Aldrin Seychell

14:50-15:20  Session III

Exploring the Link Between Test Suite Quality and Automatic Specification Inference
Luke Chircop, Christian Colombo, Mark Micallef

15:20 Coffee Break

15:50-16:50  Session IV

Fragmented Monitoring
Oscar Cornejo, Daniela Briola, Daniela Micucci, Leonardo Mariani

Reliability and Fault-Tolerance by Choreographic Design
Ian Cassar, Adrian Francalanza, Claudio Antares Mezzina, Emilio Tuosto

16:50-17:00  Closing
PhD-iFM (Tuesday, September 19th)

09:00-10:00  Keynote

**Automatic Reasoning for Novel Engineering Designs**  
Mike Nicolai

10:00 Coffee Break

10:30-12:10  Session I

**Formal Verification of CNL Health Recommendations**  
Fahrurrozi Rahman, Juliana Küster Filipe Bowles

**Modular Heap Shape Analysis for Java Programs**  
Florian Frohn, Jürgen Giesl

**Abstraction-Based Model Checking of POMDPs in Motion Planning**  
Leonore Winterer, Sebastian Junges, Ralf Wimmer, Nils Jansen, Ufuk Topcu, Jost-Pieter Katoen, Bernd Becker

**Using Coloured Petri Nets for Resource-Aware Program Analysis**  
Anastasia Gkolfi, Einar Broch Johnsen, Ingrid Chieh Yu

**Co-Simulation and Formal Verification of Logic-Based Specifications of Components in CPSs**  
Maurizio Palmieri, Cinzia Bernardeschi, Andrea Domenici

12:10 Lunch

13:40-15:20  Session II

**Security Functionality of IoT Devices**  
Elahe Fazeldehkordi, Olaf Owe, Toktam Ramezanifarkhani

**Assessing the Coverage of Formal Specifications**  
Dominic Steinhöfel

**Versioned Simulation Testing for Concurrent and Distributed Models**  
Lars Tveito, Einar Broch Johnsen, Rudolf Schlatte

**An Abstraction Technique for Describing Concurrent Program Behaviour**  
Wytse Oortwijn

**An Operational Semantics for a Weak Memory Model with Buffered Writes, Message Passing, and Goroutines**  
Daniel Fava, Martin Steffen, Volker Stolz and Stian Valle

15:20 Coffee Break
15:50-17:10 Session III

On the Synthesis of Guaranteed-Quality Plans for Robot Fleets in Logistics Scenarios via Optimization Modulo Theory
Francesco Leofante

On the Community Structure of SAT-BMC Problems
Xavier Gillard, Charles Pecheur

Virtually Timed Ambients: Formalisation and Analysis
Johanna Beate Stumpf, Einar Broch Johnsen, Martin Steffen

Towards a Contract-Based Unified Design Process
Cesar Santos, Mike Nicolai, Tom Schrijvers

17:10-17:30 Best Presentation Award

6 TLT (Friday, 22th September, 14:30-...) [Separate Registration]

The Types and Logic in Torino (http://tlt2017.di.unito.it) colloquium is a gathering for colleagues and friends who want to celebrate Mariangiola Dezani-Ciancaglini, Simona Ronchi Della Rocca and Mario Coppo, whose 70th birthdays take place between 2016 and 2017. Mariangiola, Simona and Mario are outstanding researchers in the community of theoretical computer science for their seminal contributions to the fields of λ-calculus, type theory and foundations of programming languages. They have been students of Corrado Böhm in the early 70’s and spent most of their career at the Computer Science Department of the University of Torino, leading one of the largest research groups on formal methods for four decades. During this period they have been enthusiastic mentors for many young researchers now employed in prestigious institutions all over the world.
7 Maps

“Rettorato”, Via Verdi 8

ground floor

first floor