Conference Information and Program

Contents

Welcome to ICSA 2019

Welcome to the *IEEE International Conference on Software Architecture* and "Moin Moin" from Hamburg.

The conference program offers a variety of workshops, tutorials, research and industrial tracks. The social events at the Elbphilharmonie, Miniature Wonderland and German Electron Synchrotron DESY, the welcome reception at the city hall and the conference dinner give you the opportunity for interesting discussion and networking.

Use the time after the sessions to explore Hamburg which offers great opportunities for sightseeing. You can take the ferry for a Elbe river tour, just walk around at the harbor and the UNESCO World Heritage Site Speicherstadt. Jungfernstieg at the Alster lake in the city center is also an interesting place to visit. The famous street and entertainment district Reeperbahn offers clubs and bars and there are several musicals and shows located in Hamburg.

The organizing team wishes you a pleasant and successful conference week and stay in Hamburg. If you have any questions, do not hesitate to contact us.

Contact:
Email: icsa2019@informatik.uni-hamburg.de
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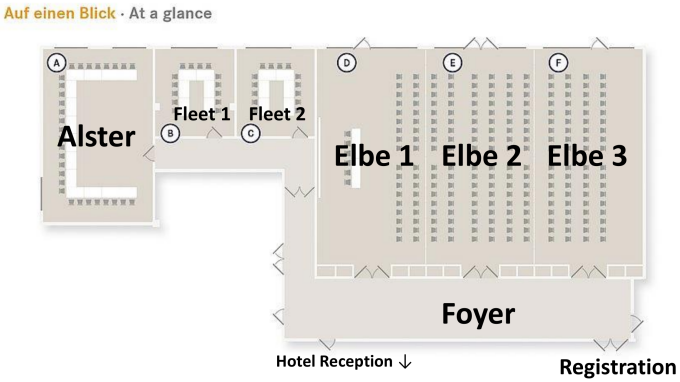
Emergency Contacts:
Police: 110
Fire Brigade & Ambulance: 112

Venue

Dorint Hotel Hamburg Eppendorf
Martinistraße 72
20251 Hamburg, Germany
Tel.: +49 40 5701500

Rooms Map

There are three halls and one room available for tracks, tutorials and workshops. Please look into the program to find out which track will be held in which room. Coffee will be served in the coffee breaks right outside the halls in the hotel foyer. The posters will be presented in the halls and foyer.



WiFi

Please choose the network "Dorint Hotels Wifi" and press the button "Conference". Enter ***dorint*** as conference name and ***Dorint*** as access code.

Travel information

Public Transportation in Hamburg – HVV

There is one ticket system for all types (bus, S-Bahn (rapid transit railway), U-Bahn (underground railway), harbor ferries). Tickets are valid immediately, which means there is no validator. Tickets are sold at HVV ticket machines (switch to English, card payment available) and by bus drivers. If you buy the tickets online (https://www.hvv.de/en) or over the app (Android/iOS), you get a 3% discount and you can buy them in advance. Don't enter a platform without a ticket!

Most important tickets are:

- **Single trip local journey** (Nahbereich) 2.30 € that is valid for the entire trip in the inner circle
- **Single trip Großbereich** 3.30 € that is valid for the entire trip in inner circle and beyond (including airport)
- **9am Day ticket** (9-Uhr-Tageskarte) 6.50 € (valid from 9am until 6am next morning) in inner circle and beyond (including airport)
- **All Day ticket** (Tageskarte) 7.80 € (valid until 6am next morning) in inner circle and beyond (including airport)
- If you are a group of at least two people that drive together the whole day and after 9am, you can share a **9am Group Ticket** for 12.20 €.
- If you want to use public transportation for **several days**, you should consider buying a 24/7 season ticket for 28.70 € for the Hamburg area AB. You can buy this ticket only online or over the HVV-App.

Hint: Use your ticket for the ferries in the harbour to get a cheap Elbe river tour (line 62 from Landungsbrücken, round trip est. 45min.)

Route from the airport by public transport

Starting at Hamburg Fuhlsbuettel Airport (HAM): Follow directions to S-Bahn (green S). Use any train of S1 to the next stop Ohlsdorf, change to U1 (destination: Ohlstedt or Großhansdorf) - exit the train at Kellinghusenstraße, take a bus 25 (right exit of the station) towards Bf. Altona, exit the bus at the 5th stop Löwenstraße (Facharztklinik); the hotel is located 80 m behind on the same side of the road.

Arrival by Train, using public transport to the hotel

Starting at Hamburg Central station (Hauptbahnhof): Use the U1 (destination Ochsenzoll, Norderstedt Mitte or Garstedt) – exit at Kellinghusenstraße, take a bus 25 (right exit of the station) towards Bf. Altona, exit the bus at Löwenstraße (Facharztklinik); the hotel is located 80 m behind on the same side of the road.

Towards city centre by public transport

From the hotel, turn right and follow Martinistraße 200m to Heluftchaussee, turn left; the bus stop is located after 150m on an isle between the lanes. Use bus 5, going down, with any destination. Buses go every 5 or 7 Minutes. Recommended bus stops in the city center are Jungfernstieg, Rathausplatz (City Hall, there is ICSA's Welcome Reception), or HBF/Mönckebergstraße (close to Hamburg Central station).

Taxi

There is an official tariff for all Hamburg taxis (yellow taxi sign on the roof), that is applied as soon as the taximeter in the car is started: except rush hour 3.50 € + 2.45 € per km, during rush hour (7-10am, 4-7pm) 4.20 € + 2.50 € per km (lower price per km for longer trips). There are several companies, including Hansa Taxi +49-40-211211 and Taxi Hamburg +49-40-666666.

Social Events

Mayor's Welcome Reception - 26.03.2019

Mayor's Welcome reception will be held in the beautiful Hamburg City Hall.
Attendee information: Badge and personal invitation letter required, departure 5 pm from conference location, access to the town hall at 6 pm, individual return.
Return: Take the U3 (yellow line) from Rathaus towards Schlump - Barmbek for 10 stops to Kellinghusenstraße. There you can take the bus line 25 towards Bf. Altona to Löwenstraße (Facharztklinik).

Social Events - 27.03.2019

There are three social event options available. Please note that there are different departure times for each event. If you want to change your social event, please use the board next to the registration desk to find a person to swap your social events.

Social Event 1: Elbphilharmonie

Guided tour through Concert hall Elbphilharmonie
Discover the new landmark of Hamburg: the concert hall Elbphilharmonie. A guided tour through the old Kaispeicher warehouse on which the concert hall is built, the foyer areas and the heart of the building, the Grand Concert Hall. We will hear stories about the beginning of the Elbphilharmonie and details about its unique architecture. An individual walk around the building on the Plaza (8th floor) is recommended.

Attendee information: Badge required, departure 2.45 from conference location, individual return, no disability access.

Return: Take the U3 (yellow line) from Baumwall towards Schlump - Barmbek for 10 stops to Kellinghusenstraße. There you can take the bus line 25 towards Bf. Altona for 5 stops to Löwenstraße (Facharztklinik).

Social Event 2: Miniature Wonderland

Guided tour through Miniature Wounderland, Hamburg's huge model railway attraction

Discover another landmark of Hamburg: the concert hall Elbphilharmonie. A guided tour through the concert hall, which is built in the old Kaispeicher A warehouse, the foyer areas and the heart of the building, the Grand Concert Hall. We will hear stories about the beginning of the Elbphilharmonie and details about its unique architecture. An individual walk around the building on the Plaza (8th floor) is recommended.

Attendee information: Badge required, departure 2.45 pm from conference location, individual return, no disability access.

Return: Take the U3 (yellow line) from Baumwall towards Schlump - Barmbek for 10 stops to Kellinghusenstraße. There you can take the bus line 25 towards Bf. Altona for 5 stops to Löwenstraße (Facharztklinik).

Social Event 3: DESY

Guided Tour to German Electron Synchrotron DESY.

The Deutsches Elektronen-Synchrotron DESY (German Electron Synchrotron) is a national research center in Hamburg that operates several particle accelerators used to investigate the structure of matter. About 600 scientists plus 1200 technicians perform research and development works there. For example, the European x-ray free electron laser (European XFEL) is the world's largest and brightest x-ray laser operates in a 3.4 km long tunnel containing a 2.1 km long superconducting linear accelerator where electrons are accelerated to

an energy of up to 17.5 GeV. Experiments produce huge amounts of data for which information processing and storage demands for novel approaches in data science, including software architectures.

Attendee information: Badge required, departure 3.00 pm from conference location, no disability access.

Return: 7.30 pm

Conference Dinner - 28.03.2019

The conference dinner including awards will take place at the Johannes Albrecht Brauhaus, Adolphsbrücke 7, 20457 Hamburg. The brewery is directly at the town canal, close to the city hall. The cozy and rustic interior invites to talk and drink a home-brewed beer.

Attendee information: Badge required, bus departure at 5.45 pm from conference location, individual return.

Return: Take the U3 (yellow line) from Rathaus towards Schlump - Barmbek for 10 stops to Kellinghusenstraße. There you can take the bus line 25 towards Bf. Altona for 5 stops to Löwenstraße (Facharztklinik).

Keynotes

Resolving technical debts in software architecture

Speaker: Carola Lilienthal, Workplace Solutions GmbH

Abstract: Today programmers do not develop applications from scratch, but they spend their time fixing, extending, modifying and enhancing existing applications. The biggest problem in their daily work is that with time maintenance mutates from structured programming to defensive programming: The code becomes too complex to be maintained. We put in code we know is stupid from an architectural point of view but it is the only solution that will hopefully work. Maintenance is more and more difficult and expensive. Our software accumulates technical debts.

In this talk, you will see how you should improve your architecture and source code to prevent technical debt growing unrestricted. With the proper knowledge about well-structured architecture, refactorings for tangled code can quickly be found. Complex code can be eliminated, and maintenance costs will be reduced.

Moving towards Evidence-based Software Architecture Research

Speaker: Claes Wohlin, Blekinge Institute of Technology

Abstract: Evidence-based Software Engineering (EBSE) was introduced as a concept into the discipline 15 years ago. However, EBSE does not come for free. We need to think carefully about the interpretation of any empirical data acquired. If misinterpretations are published and then cited, it results in spreading incorrect information. Furthermore, empirical studies are heavily context-dependent, and hence there is a need to state the context of specific studies. Software development has changed dramatically over the years. For example, we have moved from a more plan-driven approach to agile with, in many cases, frequent releases to the market or the customer. Papers are published with similar content, for example, based on the same data, partially the same data or similar research questions. As a result, it becomes hard to extract the actual evidence without it being overrepresented due to the number of publications. The keynote presents and discusses illustrations of issues related to the interpretation of empirical studies, citations of them, distortion of findings, use of data, the need to contextualize our results and to take ageing of data into account, and finally to be very careful when publishing papers reusing data from other publications. In the keynote, it is concluded that if we really would like to be successful in making software architecture research into an evidence-based discipline, we need to continue to improve the conduct and presentation of empirical studies.

Democratising Software Architecture

Speaker: Eoin Woods, Endava
Abstract: Software architecture emerged in the 1990s, and has been evolving ever since, in response to the the design challenges of each era of software systems. In parallel, the role and practice of the software architect as also been evolving.

At one time architecture was seen as a directive, up-front activity, where a single brilliant architect created the architecture for the system which was then implemented by others - the "single mind" of Fred Brooks' experience popularised as "architectus reloadus" in Martin Fowler's well known writing. However the success of agile ways of working has challenged this view and software architecture work has been steadily evolving towards a shared activity owned by the entire team.

Today's mainstream acceptance of Agile+DevOps as the preferred way of working once again raises questions of what architecture work is and who does it. It simultaneously challenges much of our previously accepted wisdom, preferring architecture to be a "shared commons" across the development organisation, while demanding a sophisticated level of software architecture practice to deliver on the promises of Agile+DevOps. One way of describing this situation is the need to "democratise" software architecture so it becomes a shared responsibility rather than a centralised impediment to rapid delivery. In this talk we'll examine the challenges of software architecture in today's modern distributed teams and ask how we might make the architecture of their systems a shared responsibility to allow them to achieve the software architecture that they need at the speed that they need it.

Program

	Monday WS4: MARCH 25			Tuesday WS4: MARCH 26		
08:30-09:00	Registration			Registration		
09:00-10:30	T1: Sense of Place within the Virtuous Circle of Architecture Decision-Making **Alster**	WS1: IoT-ASAP **Elbe 1**	WS2: WASA **Elbe 2**	T2: Architecting Trustworthy Self-adaptive Systems **Alster**	WS3: CSE & QUDOS **Elbe 1**	WS4: MARCH **Elbe 2**
10:30-11:00	Coffee Break			Coffee Break		
11:00-12:30	T1: Sense of Place within the Virtuous Circle of Architecture Decision-Making **Alster**	WS1: IoT-ASAP **Elbe 1**	WS2: WASA **Elbe 2**	T2: Architecting Trustworthy Self-adaptive Systems **Alster**	WS3: CSE & QUDOS **Elbe 1**	WS4: MARCH **Elbe 2**
12:30-14:00	Lunch			Lunch		
14:00-15:30	T1: Sense of Place within the Virtuous Circle of Architecture Decision-Making **Alster**	WS1: IoT-ASAP **Elbe 1**	WS2: WASA **Elbe 2**	T2: Architecting Trustworthy Self-adaptive Systems **Alster**	WS3: CSE & QUDOS **Elbe 1**	WS4: MARCH **Elbe 2**
15:30-16:00	Coffee Break			Coffee Break		
16:00-17:30	T1: Sense of Place within the Virtuous Circle of Architecture Decision-Making **Alster**	WS1: IoT-ASAP **Elbe 1**	WS2: WASA **Elbe 2**	T2: Architecting Trustworthy Self-adaptive Systems **Alster**	WS3: CSE & QUDOS **Elbe 1**	WS4: MARCH **Elbe 2**
17:30-18:00				**17:45** Bus Departure to Mayor's Welcome Reception		
18:30-20:00				**18:30-20:00** Mayor's Welcome Reception Hamburg City Hall		

	Wednesday WS4: MARCH 27			Thursday WS4: MARCH 28			Friday WS4: MARCH 29	
08:00-08:30	Registration							
08:30-09:00	Welcome **Elbe 1-3**			Registration				
09:00-10:00	Keynote: Carola Lilienthal, Workplace Solutions GmbH **Elbe 1-3**			Keynote: Claes Wohlin, Blekinge Institute of Technology **Elbe 1-3**			Keynote: Eoin Woods, Endava **Elbe 1-3**	
10:00-10:30	Coffee Break			Coffee Break			Coffee Break	
10:30-12:00	Data Protection and Privacy **Elbe 1**	Architecture Design **Elbe 2**	Tools **Elbe 3**	Migration to Microservices **Elbe 1-2**		Safety and Security **Elbe 3**	Architectures for Embedded Systems **Elbe 1**	Empirical Studies **Elbe 3**
12:00-13:30	**12:00-13:15** Lunch			Lunch			Lunch	
13:30-14:30	**13:15-14:15** Panel **Elbe 1-3**			Microservice Architectures in Practice **Elbe 1**	Performance Models, Antipatterns and Architecture Smells **Elbe 2**	Early Career Researchers Forum **Elbe 3**	Architectures for Automotive Systems **Elbe 1**	Architecture Quality **Elbe 3**
14:30-15:00	Social Event							
15:00-15:30	**Elbphilharmonie**: Bus Departure 14:45, Individual Return			Coffee Break			Closing **Elbe 1-3**	
15:30-17:00	**Miniature Wonderland**: Bus Departure 14:45, Individual Return			Architecture Adaptation and Prediction **Elbe 1**	Services and Containers **Elbe 2**	Early Career Researchers Forum **Elbe 3**	Coffee Break	
17:00-17:30	**DESY**: Bus Departure 15:00, Return 19:30							
17:30-18:00				**17:45** Bus Departure to Conference Dinner				
18:30-20:00				**18:30-23:00** Conference Dinner and Awards, Brauhaus Joh. Albrecht: Adolphsbrücke 7, 20457 Hamburg				

Program: Monday - 25.03.2019

Tutorial 1 - Room Alster

09:00 - 17:30	T1: Rebecca Wirfs-Brock, Ken Power. Sense of Place within the Virtuous Circle of Architecture Decision-Making

WS1: IoT-ASAP - Room Elbe 1

09:00 - 09:15	Opening
09:15 - 10:30	**Keynote by Dr. Felix Lösch** (Senior Project Manager, Corporate Research, Robert Bosch GmbH): Challenges for Future IoT Applications
10:30 - 11:00	Coffee Break
11:00 - 12:30	**Paper Session**
11:00 - 11:20	Manuel Gotin, Felix Loesch and Ralf Reussner. TCP-inspired Congestion Avoidance for Cloud-IoT Applications
11:20 - 11:40	Sebastian Kotstein and Christian Decker. Reinforcement Learning for IoT Interoperability
11:40 - 12:00	Lidiane Santos, Eduardo Silva, Thais Batista, Jair Leite and Everton Cavalcante. Identifying Requirements for Architectural Modeling in Internet of Things Applications
12:00 - 12:15	Floriment Klinaku, Alireza Hakamian and Markus Frank. A Process Model for Elastic and Resilient IoT Applications with Emergent Behaviors
12:15 - 12:30	Discussion
12:30 - 14:00	Lunch
14:00 - 15:30	**Working/Breakout Session**
15:30 - 16:00	Coffee Break
16:00 - 17:10	**Working/Breakout Session**
17:10 - 17:30	**Summary of Working/Breakout Session and Closing**

WS2: WASA 2019 - Room Elbe 2

09:00 - 09:15	Welcome
09:15 - 10:30	**Keynote by Simon Fürst** (BMW, General Manger Software-based Features): System/Software Architecture for Autonomous Driving Systems
10:30 - 11:00	Coffee Break
11:00 - 11:45	**Session 1: Requirements and Process** *Chair: Yanja Dajsuren*
11:00 - 11:20	Agile System Architecture in Large Organizations: an Experience Report from Volvo Cars Authors: Darko Durisic and Attila Berényi Discussant: Tobias Wägemann, Ramin Tavakoli Kolagari and Klaus Schmid
11:20 - 11:45	Exploring Automotive Stakeholder Requirements for Architecture Optimization Support Authors: Tobias Wägemann, Ramin Tavakoli Kolagari and Klaus Schmid Discussant: Darko Durisic and Attila Berényi
11:45 - 12:30	**Session 2: Architectural Design** *Chair: Yanja Dajsuren*
11:45 - 12:10	Microservice Architectures for Advanced Driver Assistance Systems: A Case-Study Authors: Jannik Lotz, Andreas Vogelsang, Ola Benderius and Christian Berger Discussant: Vadim Cebotari and Stefan Kugele
12:10 - 12:35	On the Nature of Automotive Service Architectures Authors: Vadim Cebotari and Stefan Kugele Discussant: Jannik Lotz, Andreas Vogelsang, Ola Benderius and Christian Berger
12:30 - 14:00	Lunch

14:00 - 15:30	**Session 3: Verification, Validation, and Analysis** *Chair: Darko Durisic*
14:30 - 14:20	Towards a Virtual Continuous Integration Platform for Advanced Driving Assistance Systems Authors: Adam Bachorek, Felix Schulte-Langforth, Alexander Witton, Thomas Kuhn and Pablo Oliveira Antonino Discussant: Yuting Fu, Andrei Terechko and Tjerk Bijlsma
14:20 - 12:40	"Experience report: Combining Mixed Criticality support with Resource Reservation and Spare Capacity Allocation Authors: Reinder J. Bril and Erik J. Luit Discussant: Lars Stockmann, Sven Laux and Eric Bodden"
14:40 - 15:05	A Retargetable Fault Injection Framework for Safety Validation of Autonomous Vehicles Authors: Yuting Fu, Andrei Terechko and Tjerk Bijlsma Discussant: Adam Bachorek, Felix Schulte-Langforth, Alexander Witton, Thomas Kuhn and Pablo Oliveira Antonino
15:05 - 15:30	Architectural Runtime Verification Authors: Lars Stockmann, Sven Laux and Eric Bodden Discussant: Reinder J. Bril and Erik J. Luit
15:30 - 16:00	Coffee Break
16:00 - 16:30	**Industrial Talk by Thomas Galla** (Elektrobit, Chief Expert, Lead Architect Com Middleware, PI-IFS-C) Multi-Core Support and Basic Software Distribution in Classic AUTOSAR
16:30 - 17:00	**Session 4** *Chair: Stefan Kugele, Yanja Dajsuren, Darko Durisic* • Breakout Groups
17:45 - 18:00	Closing

Program: Tuesday - 26.03.2019

Tutorial 2 - Room Alster

09:00 - 17:30	T2: Radu Calinescu, Danny Weyns, Simos Gerasimou and Ibrahim Habli. Architecting Trustworthy Self-adaptive Systems

WS3: CSE & QUDOS - Room Elbe 1

09:00 - 09:15	Welcome
09:15 - 10:30	**Keynote by Ian Gorton**: Engineering at Hyperscale – Architectural Issues and Challenges
10:30 - 11:00	Coffee Break
11:00 - 12:30	**Session A: DevOps Continuit** *Chair: Stephan Krusche*
11:00 – 11:20	Neil Ernst, Rick Kazman and Philip Bianco. Component Comparison, Evaluation, and Selection: A Continuous Approach
11:20 – 11:40	Philipp Haindl and Reinhold Ploesch. Towards Continuous Quality: Measuring and Evaluating Feature-Dependent Non-Functional Requirements in DevOps
11:40 – 12:00	Justus Bogner, Tobias Boceck, Matthias Popp, Dennis Tschechlov, Stefan Wagner and Alfred Zimmermann. Towards a Collaborative Repository for the Documentation of Service-Based Antipatterns and Bad Smells
12:00 – 12:20	Christina Paule, Thomas F. Dällmann and André van Hoorn. Vulnerabilities in Continuous Delivery Pipelines? A Case Study
12:30 - 14:00	Lunch

14:00 - 15:30	**Session B: Assessment in Industrial DevOps** *Chair: Damian A. Tamburri*	
	14:00 – 14:20	Robert Chatley, Tony Field and David We. Continuous Performance Testing in Virtual Time
	14:20 – 14:40	Dominik Ernst, Alexander Becker and Stefan Tai. Rapid Canary Assessment Through Proxying and Two-Stage Load Balancing
	14:40 – 15:00	Ignacio Blanquer, Francisco Brasileiro, Amanda Calatrava, Thiago Emmanuel Pereira and Miguel Caballer. Convenient Deployment of Self-Managed Elastic Clusters on Federated Clouds
	15:00 – 15:20	Wilhelm Hasselbring, Sören Henning, Björn Latte, Armin Möbius, Thomas Richter, Stefan Schalk and Maik Wojcieszak. Industrial DevOps
15:30 - 16:00	Coffee Break	
16:00 - 17:30	**Session C: Industry** *Chairs: Andreas Steffens & Uwe Zdun*	
	16:00 – 16:20	Philipp Obergfell, Stefan Kugele, Christoph Segler, Alois Knoll and Eric Sax. Continuous Software Engineering of Innovative Automotive Functions: An Industrial Perspective
	16:20 – 17:20	Panel: Industrial & Academic Research on DevOps
	17:20 – 17:30	Closing

WS4: MARCH - Room Elbe 2

09:00 - 09:15	Opening
09:15 - 10:30	**Session 1: Keynote by Dr. Katrin Eling**: Intuition and Rationality in Design Decision Making
10:30 - 11:00	Coffee Break
11:00 - 11:45	**Session 2: DM and Agile** • Extracting Quality Attributes from User Stories for • Early Architecture Decision Making • High-level Design Stories in Architecture-centric Agile Development
12:30 - 14:00	Lunch
14:00 - 15:30	**Keynote by Henry Muccini**: The influence of group decision making on architecture design decisions
15:30 - 16:00	Coffee Break
16:00 - 17:30	**DM and Reasoning** • Evaluating Design Rationale in Architecture • DecidArch v2: An improved Game to teach Architecture Design Decision Making • Open discussions
17:30	Closing

Welcome Reception

17:45	Bus Departure from Dorint Hotel
18:30 - 20:00	Mayor's Welcome Reception, Hamburg City Hall
	Individual Return

Program: Wednesday - 27.03.2019

Room Elbe 1

10:30 - 12:00 **Data Protection and Privacy** *Chair: Wilhelm Hasselbring*

- Stephan Seifermann, Robert Heinrich and Ralf Reussner. Data-Driven Software Architecture for Analyzing Confidentiality (Technical Track)
- Laurens Sion, Pierre Dewitte, Dimitri Van Landuyt, Kim Wuyts, Ivo Emanuilov, Peggy Valcke and Wouter Joosen. An Architectural View for Data Protection by Design (Technical Track)
- Michael Colesky, Katerina Demetzou, Lothar Fritsch and Sebastian Herold. Helping Software Architects Familiarize with the General Data Protection Regulation (NEMI Track)

Room Elbe 2

10:30 - 12:00 **Architecture Design** *Chair: Matthias Galster*

- Andrew Leigh, Michel Wermelinger and Andrea Zisman. Risk Containers – A Help or Hindrance to Practitioners? (NEMI Track)
- Florian Wessling, Christopher Ehmke, Ole Meyer and Volker Gruhn. Towards Blockchain Tactics: Building Hybrid Decentralized Software Architectures (NEMI Track)
- Fabian Gilson and Danny Weyns. When Natural Language Processing Jumps into Collaborative Software Engineering (NEMI Track)

Tool Track - Room Elbe 3

10:30 - 12:00 *Chair: Tomáš Bureš*

- Manoj Bhat, Christof Tinnes, Klym Shumaiev, Andreas Biesdorf, Uwe Hohenstein and Florian Matthes. ADeX: A Tool for Automatic Curation of Design Decision Knowledge for Architectural Decision Recommendations
- Axel Busch, Dominik Fuchß and Anne Koziolek. PerOpteryx: Automated Improvement of Software Architectures
- Paolo Arcaini, Raffaela Mirandola, Elvinia Riccobene and Patrizia Scandurra. A Pattern-oriented Design Framework for Self-adaptive Software Systems
- David Gesvindr and Barbora Buhnova. PaaSArch: Quality Evaluation Tool for PaaS Cloud Applications using Generated Prototypes

Panel - Room Elbe 1-3

13:15 - 14:15 *Chair: Ivica Crnkovic*

- 13:15 - 13:30 "Current views on software architecture", presented by the winner of ICSA2019's Most Influential Paper Award
- 13:30 - 14:15 Panel "Future challenges in architecting and potential remedies"

Social Event

Elbphilharmonie

14:45	Bus Departure from Dorint Hotel
	Individual Return

Miniature Wonderland

14:45	Bus Departure from Dorint Hotel
	Individual Return

DESY

15:00	Bus Departure from Dorint Hotel
19:30	Return

Program: Thursday - 28.03.2019

Room Elbe 1

10:30 - 12:00 **Migration to Microservices** *Chair: Anne Koziolek*

- Florian Rademacher, Sabine Sachweh and Albert Zündorf. Aspect-oriented Modeling of Technology Heterogeneity in Microservice Architecture (Technical Track)
- Pablo Cruz, Hernan Astudillo, Rich Hilliard and Miguel Collado. Assessing migration of a 20-year-old system to a micro-service platform using ATAM (SAIP Track)
- Jean-Philippe Gouigoux and Dalila Tamzalit. "Functional-first" recommendations for beneficial microservices migration and integration - Lessons learned from an industrial experience (SAIP Track)

13:30 - 15:00 **Microservice Architectures in Practice** *Chair: Steffen Becker*

- Cheng Zhang, Shanshan Li, Zijia Jia, Chenxing Zhong and He Zhang. Microservice Architecture in Reality: An Industrial Inquiry(Technical Track)
- Christopher Gerking and David Schubert. Component-Based Refinement and Verification of Information-Flow Security Policies for Cyber-Physical Microservice Architectures (Technical Track)
- Justus Bogner, Jonas Fritzsch, Stefan Wagner and Alfred Zimmermann. Microservices in Industry: Insights into Technologies, Characteristics, and Software Quality (SAIP Track)

15:30 - 17:00 **Architecture Adaptation and Prediction** *Chair: Patrizio Pelliccione*

- Felipe Cerezo, Carlos E. Cuesta, José Carlos Moreno Herranz and Belen Vela Sanchez. Deconstructing the Lambda architecture: an experience report (SAIP Track)
- Marian Daun, Jennifer Brings, Patricia Aluko Obe, Stefanie Weiss, Birthe Böhm and Stephan Unverdorben. Using View-based Architecture Descriptions to Aid in Automated Runtime Planning for a Smart Factory (SAIP Track)
- Henry Muccini and Karthik Vaidhyanathan. A Machine Learning-driven Approach for Proactive Decision Making in Adaptive Architectures (NEMI Track)

Room Elbe 2

13:30 - 15:00 **Performance Models, Antipatterns and Architecture Smells**
Chair: Bara Buhnova

- Simon Eismann, Johannes Grohmann, Jürgen Walter, Jóakim von Kistowski and Samuel Kounev. Integrating Statistical Response Time Models in Architectural Performance Models (Technical Track)
- Davide Arcelli, Vittorio Cortellessa, Daniele Di Pompeo, Romina Eramo and Michele Tucci. Exploiting Architecture/Runtime Model-driven Traceability for Antipattern-based Performance Improvement (Technical Track)
- Fangchao Tian, Peng Liang and Muhammad Ali Babar. How Developers Discuss Architecture Smells?: An Exploratory Study on Stack Overflow (Technical Track)

15:30 - 17:00 **Services and Containers** *Chair: Eoin Woods*

- Ingo Weber, Qinghua Lu, An Binh Tran, Amit Deshmukh, Marek Gorski and Markus Strazds. A Platform Architecture for Multi-Tenant Blockchain-based Systems (Technical Track)
- Marc Hesenius, Andrij Usov, Claas Rink, Dmitri Schmidt and Volker Gruhn. A Flexible Platform Architecture for the Dynamic Composition of Third-Party-Services (SAIP Track)

Room Elbe 3

10:30 - 12:00 **Safety and Security** *Chair: Riccardo Scandariato*

- Danielle Gonzalez, Fawaz Alhenaki and Mehdi Mirakhorli. Architectural Security Weaknesses in Industrial Control Systems (ICS): An Empirical Study based on Disclosed Software Vulnerabilities (Technical Track)
- Faheem Ullah and Muhammad Ali Babar. An Architecture-driven Adaptation Approach for Big Data Cyber Security Analytics (Technical Track)
- Alexandru Constantin Serban. Designing Safety Critical Software Systems to Manage Inherent Uncertainty (NEMI Track)

Early Career Research Forum - Room Elbe 3

13:30 - 15:00 **Session 1** *Chair: Claus Lewerentz*

- Antonela Tommasel, ISISTAN Research Institute. Applying Social Network Analysis Techniques to Architectural Smell Prediction
- Paula Rachow, University of Hamburg. Refactoring Decision Support for Developers and Architects based on Architectural Impact

15:30 - 17:00 **Session 2** *Chair: Claus Lewerentz*

- Haruki Yokoyama, Fujitsu Laboratories Ltd. Machine Learning System Architectural Pattern for Improving Operational Stability
- Carianne Pretorius, Eindhoven University of Technology. Beyond Reason: Uniting Intuition and Rationality in Software Architecture Decision Making

Conference Dinner

17:45	Bus Departure from Dorint Hotel
18:30 - 23:00	Conference Dinner and Awards Brauhaus Joh. Albrecht: Adolphsbrücke 7, 20457 Hamburg
	Individual Return

Program: Friday - 29.03.2019

Room Elbe 1

10:30 - 12:00 **Architectures for Embedded Systems** *Chair: Magnus Standar*

- Jasmin Jahic, Peter Enbrecht, Uwe Mayer and Pablo Oliveira Antonino. Mitigating the Influence of Embedded Software Development Environment on Software Architecture during the Migration to new Hardware Platforms (Technical Track)
- Kilian Telschig and Alexander Knapp. Synchronous Reconfiguration of Distributed Embedded Applications during Operation (Technical Track)
- Stephan Sehestedt, Georgia Giannopoulou, Aurélien Monot and Michael Wahler. Case Study: Virtualizing Embedded Firmware (SAIP Track)

13:30 - 15:00 **Architectures for Automotive Systems** *Chair: Ivica Crnkovic*

- Rebekka Wohlrab, Patrizio Pelliccione, Eric Knauss and Rogardt Heldal. On Interfaces to Support Agile Architecting in Automotive: An Exploratory Case Study (Technical Track)
- Jasmin Jahic, Varun Kumar, Pablo Oliveira Antonino and Gerhard Wirrer. Testing the Implementation of Concurrent AUTOSAR Drivers against Architecture Decisions (Technical Track)
- Yanja Dajsuren and Guido Loupias. Safety Analysis Method for Cooperative Systems (Technical Track)

Room Elbe 3

10:30 - 12:00 **Empirical Studies** *Chair: Heiko Koziolek*

- Torvald Mårtensson, Antonio Martini, Daniel Ståhl and Jan Bosch. Continuous Architecture: Towards the Goldilocks Zone and Away from Vicious Circles (Technical Track)
- Roberto Verdecchia, Ivano Malavolta and Patricia Lago. Guidelines for Architecting Android Apps: A Mixed-Method Empirical Study (Technical Track)
- Rebekka Wohlrab, Ulf Eliasson, Patrizio Pelliccione and Rogardt Heldal. Improving the Consistency and Usefulness of Architecture Descriptions: Guidelines for Architects (Technical Track)

13:30 - 15:00 **Architecture Quality** *Chair: Vittorio Cortellessa*

- Katja Tuma, Musard Balliu and Riccardo Scandariato. Flaws in Flows: Unveiling Design Flaws via Information Flow Analysis (Technical Track)
- Md Rakibul Alam, Ilias Gerostathopoulos, Christian Prehofer, Alessandro Attanasi and Tomas Bures. A Framework for Tunable Anomaly Detection (Technical Track)
- Jan Keim and Anne Koziolek. Towards Checking Consistency between Software Architecture and Informal Documentation (NEMI Track)

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