DATE 2018 in Dresden received over 1,200 registrations from international experts, who celebrated another exciting conference edition

The DATE 2018 conference and exhibition attracted more than 1,200 registrations from over 40 countries and concluded with excellent feedback from both participants and exhibitors.

This year, the conference took place for the fifth time in the International Congress Center Dresden, Germany, on March 19 – 23, 2018.

Out of a total of 766 paper submissions received, 39% came from authors in Europe, 26% of submissions were from America, 34% from Asia, and 1% from the rest of the world. This distribution clearly demonstrates DATE’s international character, global reach, and impact.

For the 21st successive year, DATE presented an exciting technical programme, comprising 79 technical sessions including 8 Exhibition Theatre sessions.

The DATE week started on Monday with four in-depth technical tutorials on the four main tracks of DATE as well as three industry hands-on tutorials given by leading experts in their respective fields. Technical topics covered were emerging technologies for computing, industrial internet-of-things (IoT), reliability from physics to CAD, virtual prototyping and low-power design, as well as industrial topics on building ARM powered IoT, computer vision for automated driving in MATLAB, and how to implement domain-specific modeling languages.

Also on Monday, DATE hosted the first and very successful edition of a new forum, “Advancing Diversity in Electronic Design Automation (DivEDA)”, which aims to increase the number and visibility of women and underrepresented minorities in the research community.

The plenary keynote speakers on Tuesday were Prof. Amnon Shashua, CEO & CTO of Mobileye, an Intel company, and Senior Vice President of Intel Corporation, whose talk was about “The Responsibility Sensitive Safety (RSS) Formal Model toward Safety Guarantees for Autonomous Vehicles” and Dr. Christopher Voigt, Professor of Biological Engineering at MIT, who talked about “Programming Living Cells: Design Automation to Map Circuits to DNA”. On the same day, the Executive Track offered a series of business panels with executive speakers from companies leading the design and automation industry, discussing hot topics.

PhD Forum Best Poster Prize supported by EDAA, ACM Sigda and IEEE CEDA

The PhD Forum Best Poster Prizes goes to:

Oliver Keszocze, University of Bremen, DE

“Exact Design of Digital Microfluidic Biochips”

Anirudh Iyengar and Swaroop Ghosh, Pennsylvania State University, US

“Spintronic Memory towards Secure and Energy-Efficient Computing”

DATE Best IP Award 2018

The DATE Best IP Award 2018 goes to:

Jeroen van Dijk¹, Andrei Vladimirescu², Masoud Babaie¹, Edoardo Charbon¹ and Fabio Sebastianò¹

¹Delft University of Technology, NL, ²University of California, Berkeley, US
DATE 2018 Impressions

2018-03-20

Opening Session

Read more ...
EDAA Achievement Award

Prof. Dr. Mary Jane Irwin
The Pennsylvania State University, U.S.A.

“In recognition of outstanding contributions to design, design automation and its community.”

Awardee Topic 1

New directions in software design and optimization for embedded, cyber-physical and secure systems

Alessandro Biondi, Ph.D.
Scuola Superiore Sant’Anna, Pisa, Italy;
Advisor: Prof. G. Buttazzo and Prof. Marco di Natale

“Analysis and Design Optimization of Real-Time Engine Control Software”
Awardee Topic 2

- New directions in system-on-chip platforms co-design, novel emerging architectures and system-level management

Matthias Jung, Ph.D.
U of Kaiserslautern, Germany
Advisor: Prof. J. Dibb and N. Wahl

"System Modeling, Analysis and Optimization for Digital and Mixed-Signaling Architectures"

Awardee Topic 3

- New directions in logic, physical design and CAD for analog/mixed-signal, nano-scale and emerging technologies

Rajendra Bishnoi, Ph.D.
Karlsruhe Institute of Technology, Germany
Advisor: Prof. M. S. Shooori and Dr. G. Prenat

"Reliable Low Power and High Performance Spintronic Memory"
Awardee Topic 4

- New directions in safety, reliability and security-aware hardware design, validation and test for systems and circuits

Tobias Schneider, Ph.D.
Ruhr-Universität Bochum, Germany;
Advisor: Prof. Guneysu and Prof. A. Moradi

"Hardware-based Countermeasures Against Physical Attacks"

DATE Fellow Award

- Prof. David Atienza
EPFL
- For outstanding service contribution as General Chair of DATE 2017-2018
IEEE CEDA and CS TTTC Service Award

- Prof. David Atienza
  EPFL
- For outstanding service contribution as General Chair of DATE
.4% of 6,000,000 crashes

THANK YOU
Drive Safe!
Monday Tutorials, IoT Student Challenge, Forum: Advancing Diversity in EDA and PhD Forum
DATE Proceedings
2018-03-21

All DATE Proceedings are accessible from the DATE venue and will also be publically available two years after DATE! Meanwhile you will find current proceedings at IEEE Xplore Digital Library or ACM Digital Library!

Download DATE 2018 proceedings as one ZIP file (~ 159 MB). Available at the venue via Telekom Wifi only!

The publically available proceedings are here:

- 2018
- 2016
- 2015
- 1998 - 2014
EDAA Achievement Award 2018 goes to Mary Jane Irwin
2018-03-20

The Achievement Award is given to individuals who made outstanding contributions to the state of the art in electronic design, automation and testing of electronic systems in their life. In order to be eligible, candidates must have made innovative contributions which had an impact on the way electronic systems are being designed.

Dr. Irwin has been on the faculty at Penn State since 1977 where she currently holds the title of Emeritus Evan Pugh University Professor in Computer Science and Engineering. Prior to retirement in July 2017, she also was the A. Robert Noll Chair in Engineering in the Department of Computer Science and Engineering. She has devoted her entire career to promote the field of design and design automation and computer architecture. She has spent close to four decades contributing in a variety of ways to the field.

University Booth at DATE 2018 - Final Programme
2018-03-09

The final programme of the University Booth at DATE 2018 is available online here and for download as PDF document within the DATE booklet available here (page 122 ff).

The University Booth is organised during DATE and will be located in booth 16 of the exhibition area. All demonstrations will take place from Tuesday, March 20 to Thursday, March 22, 2018 during DATE. Universities and public research institutes have been invited to submit hardware or software demonstrators.

The University Booth programme is composed of 34 demonstrations from 14 different countries, presenting software and hardware solutions. The programme is organised in 11 sessions of 2 or 2.5 h duration and will cover the topics:

- Electronic Design Automation Prototypes
The University Booth at DATE 2018 invites you to booth 16 to find out more about the latest trends in software and hardware from the international research community.

**Workshop Handouts**

2018-06-29

Please click a link below for download of the DATE 2018 Workshop handout material. Download is possible only for registered Workshop participants. You have received the password by e-mail or at the on-site registration desk.

If a Workshop is not listed below, the organizers have not yet provided the handout material.

**W02 Emerging Memory Solutions & Applications - Technology, Manufacturing, Architectures, Design, Automation and Test**

Proceedings

**W03 New Platforms for Future Cars: Current and Emerging Trends**

Proceedings for the accepted short papers (short presentations in the program) and the slides of the presentations of the invited speakers are now available.

**W04 Design Automation for Understanding Hardware Designs (DUHDE5)**

Handouts

**W05 Trustworthy Manufacturing and Utilization of Secure Devices (TRUDEVICE 2018)**

Handouts

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**Tutorial Handouts**

2018-03-19

Please click a link below for download of the DATE 2018 tutorial handout material. Download is possible only for registered tutorial participants. You have received the password by e-mail or at the on-site registration desk.

If a tutorial is not listed below, the organizers have not yet provided the handout material.

There is one common handout for all tutorials that can be downloaded here.

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**Final Event Overview**

Welcome to DATE 2018

General Chair
Jan Madsen, Technical University of Denmark, DK
Contact Jan Madsen

Programme Chair
Ayse Coskun, Boston University, US
papers @ date-conference [dot] com

DATE 2018 Final Programme

Click here for the final Programme in PDF format for download.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Tutorials</td>
<td>07:30-08:30 Speaker’s breakfast (restricted to the speakers, chairs and co-chairs of the day); room: Saal 1</td>
</tr>
<tr>
<td>Welcome Reception &amp; PhD Forum, hosted by EDAA, ACM SIGDA, and IEEE CEDA</td>
<td>Opening Session: Plenary, Awards Ceremony &amp; Keynote Addresses and Keynote Addresses</td>
</tr>
<tr>
<td>Fringe Meetings &amp; Co-Located Workshops</td>
<td>Technical Conference</td>
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<tr>
<td></td>
<td>Vendor Exhibition &amp; Exhibition Theatre</td>
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<td></td>
<td>Interactive Presentation IP1</td>
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<td></td>
<td>Executive Sessions</td>
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<td>University Booth</td>
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<tr>
<td></td>
<td>Fringe Meetings &amp; Co-Located Workshops</td>
</tr>
<tr>
<td></td>
<td>Exhibition Reception</td>
</tr>
</tbody>
</table>
On March 19, DATE 2018 opens the doors to the 21st DATE conference at the International Congress Center in Dresden, Germany.

The 21st DATE conference and exhibition takes place in Dresden for the fifth time - bringing together designers and design automation users, researchers and vendors, as well as specialists in the hardware and software design, test and manufacturing of electronic circuits and systems. DATE puts strong emphasis on ICs/SoCs, reconfigurable hardware and embedded systems, including embedded software.

DATE 2018 takes place at the International Congress Center Dresden, Germany, from March 19 – 23, 2018, and is chaired by Professor Jan Madsen, Technical University Denmark, DK.

On the first day of the DATE event, four in-depth technical tutorials on the four main topics of DATE as well as three industry hands-on tutorials are given by leading experts in their respective fields. Technical topics covered are emerging technologies for computing, industrial internet-of-things (IoT), reliability from physics to CAD, virtual prototyping and low-power design, as well as industrial topics on building ARM powered IoT, computer vision for automated driving in MATLAB, and how to implement domain-specific modeling languages.

Also on Monday, DATE hosts the first edition of a new forum, “Advancing Diversity in Electronic Design Automation (DivEDA)”, which aims to increase the number and visibility of women and underrepresented minorities in the research community.

The plenary keynote speakers on Tuesday are Prof. Amnon Shashua, CEO & CTO of Mobileye, an Intel company, and Senior Vice President, Intel Corporation, whose talk is about “The Responsibility Sensitive Safety (RSS) Formal Model toward Safety Guarantees for Autonomous Vehicles” and Dr. Christopher Voigt, Professor of Biological Engineering at MIT, to talk about “Programming Living Cells: Design Automation to Map Circuits to DNA”. On the same day, the Executive Track offers a series of business panels with executive speakers from companies leading the design and automation industry, discussing hot topics.

The main conference programme from Tuesday to Thursday includes 79 technical sessions organized in parallel tracks from the four areas;

- D – Design Methods & Tools
- A – Application Design
- T – Test, Reliability, and Robustness
- E – Embedded and Cyber-Physical Systems

and from several special sessions on hot topics, such as, emerging technologies, low power challenges and approximate computing for IoT devices, security-aware design in cyber-physical systems, new benchmarking methods and applications for emerging devices, circuits, and architectures, methodologies to design and manage exascale computing system technologies, as well as results and lessons learned from European projects.

Two Special Days in the programme focus on areas bringing new challenges to the system design community: Future and Emerging Technologies and Designing Autonomous Systems. Each of the Special Days has a full programme of keynotes, panels and technical presentations.

During the Special Day on “Future and Emerging Technologies” on Wednesday, a keynote is given by Prof. Jelena Vuckovic from Stanford University, on “From Inverse Design to Implementation of Robust and Efficient Photonics for Computing”. On Thursday in the frame of the Special Day on “Designing Autonomous Systems”, Thomas Form, Head of Electronics and Vehicle Research, Volkswagen AG, and coordinator of the Pegasus research project on safety of automated driving gives a talk about “Autonomous Driving: Ready to Market? Which are the Remaining Top Challenges?”.

On Friday, 6 full-day workshops will be given, covering a large number of hot topics like Software for IoT, Emerging Memories and Interconnections, and New Platforms for Future Cars.

The full conference programme is available online: https://www.date-conference.com/conference-event-overview

Exhibition and Exhibition Theatre

DATE 2018 is complemented by an international exhibition for electronic design, automation and test, which runs for three days (Tuesday – Thursday), with special emphasis on the areas autonomous driving, 5G, FDSOI and IoT Security.

The full list of participating exhibitors and sponsors including their company profiles can be found online: https://www.date-conference.com/exhibitors-sponsors

In addition, there is a presentation theatre as part of the exhibition (Tuesday – Thursday) with 28 presentations in six exhibition workshops. The programme highlights visionary talks from industrial leaders, tutorials, and best practice presentations. With workshops on autonomous driving and on functional safety, the application field of “automotive” is featured, along with a workshop on leading edge designs in the fields of IoT, RF and mobility using the technology 22FDX. There are also workshops on FPGA and SoC system development, secure IoT systems, and on enabling ICT innovations for SMEs.

Entrance to the exhibition is free of charge. All exhibition theatre sessions (in the Exhibition Theatre, located in the exhibition area) can be visited with a free-of-charge exhibition visitor registration; a conference registration is not required.

Detailed information on the Exhibition Theatre sessions is available online:
University Booth

Another hot-spot in the exhibition is the University Booth where leading universities and research institutes present their latest research results with hardware and software demonstrators. With various sessions and presentations running in parallel, the University Booth is a unique place showcasing a large number of innovations covering EDA, design and test which will shape and revolutionize the way we design products in the future.

Detailed information on the University Booth programme is available online: https://www.date-conference.com/exhibition/u-booth

DATE 2018 takes place at the International Congress Center in Dresden, Germany

The International Congress Center Dresden is directly located on the banks of the river Elbe with a spectacular view at the historic city centre. It is characterized by its modern architecture, easily accessible from Dresden Airport by public transport and within walking distance to downtown Dresden and all famous sights.

The Saxony state capital Dresden is beautifully located in the picturesque environment of the river Elbe valley in the eastern part of Germany. It belongs to the Saxon Triangle metropolitan area with around 2.4 million inhabitants. The city possesses a rich cultural life with plenty of popular sights such as the famous Frauenkirche, combining both a unique baroque flair and a modern vivid spirit. It is well-known as popular tourist destination with short walking distances, but moreover recognized for its cutting-edge technology and economy sector in Germany and abroad. With more than 46 research institutes, various universities, and numerous non-university research organizations, Dresden is an important centre of science. The Dresden University of Technology is one of the 10 largest universities in Germany and part of the German Universities Excellence Initiative. Silicon Saxony is one of Europe’s most successful trade association for the semiconductor, electronic, microsystems and software industries, with more than 300 members. DATE is cooperating closely with Silicon Saxony to maximize quality visitor attendance to the show and increase visibility of the conference in the region. Dresden therefore provides an excellent venue for hosting DATE 2018.

DATE Party – Networking Event

The highlight of the DATE week is again the DATE Party, which offers the perfect occasion to meet friends and colleagues in a relaxed atmosphere while enjoying local amenities. Hence, the party is one of the main networking opportunities during the DATE week. The party is scheduled on March 21, 2018, from 1900 to 2300, and takes place in one of Dresden’s most recognized museum locations, the Deutsches Hygiene-Museum Dresden. The museum was founded in 1912 and unlike its traditional name, the museum today offers not just hygiene in the medical or colloquial way, also a permanent collection “Adventure Human Being” showing how people shape their environment and affect society as physical and intellectual beings, as well as how they are influenced by the environment and society.

All delegates, exhibitors and their guests are invited to attend the party. Please note that entrance is only possible with a valid party ticket.

For further information, please visit: www.date-conference.com

DATE 2018 in Dresden: Highlighting Future and Emerging Technologies and Designing Autonomous Systems

DATE 2018: Advance Programme available online at http://www.date-conference.com/conference/event-overview

DATE combines the world’s favourite electronic systems design and test conference with an international exhibition for electronic design, automation and test, from system-level hardware and software implementation right down to integrated circuit design.

Out of a total of 766 paper submissions received, a large share (39%) is coming from authors in Europe, 26% of submissions are from America, 34% from Asia, and 1% from the rest of the world. This distribution clearly demonstrates DATE’s international character, global reach, and impact.

For the 21st successive year, DATE has prepared an exciting technical programme. With the help of 335 members of the Technical Program Committee who carried out 3079 reviews (mostly four reviews per submission), finally 185 papers (24%) were selected for regular presentation and 85 additional ones (cumulatively 35%, including all papers) for interactive presentation.

The DATE conference will take place from 19 to 23 March 2018, at the International Congress Center Dresden, Germany.

On the first day of the DATE event, four in-depth technical tutorials on the four main topics of DATE as well as three industry hands-on tutorials will be given by leading experts in their respective fields. This covers technical topics on Emerging Technologies for Computing, Industrial IoT, Reliability from Physics to CAD, and Virtual Prototyping and Low-Power Design, and industrial topics on Building ARM Powered Internet-of-Things, Computer Vision for Automated Driving in MATLAB, and How to Implement Domain-Specific Modeling Languages.

Also on Monday, DATE will host the first edition of a new forum, “Advancing Diversity in Electronic Design Automation (DiVE-EDA)”, which aims to increase the number and visibility of women and underrepresented minorities in the research community.

The plenary keynote speakers on Tuesday are Prof. Amnon Shashua, CEO & CTO of Mobileye, who will talk about “The Responsibility Sensitive Safety (RSS) Formal Model toward Safety Guarantees for Autonomous Vehicles” and Dr. Christopher Voigt, Professor of Biological Engineering at MIT, to talk about “Programming Living Cells: Design automation to map circuits to DNA”. On the same day, the Executive Track offers a series of business panels with executive speakers from companies leading the design and automation industry, discussing hot topics.

The main conference programme from Tuesday to Thursday includes 71 technical sessions organized in parallel tracks from the four areas

D – Design Methods & Tools
A – Application Design
T – Test, Reliability, and Robustness
E – Embedded and Cyber-Physical Systems

2nd IoT Student Challenge, sponsored by IEEE CEDA and Texas Instruments

Monday

Join Texas Instruments and IEEE CEDA @DATE 2018 for an Exciting Day practicing with TI's SimpleLink Technology
The SimpleLink MCU platform from Texas Instruments is a single development environment that delivers flexible hardware, software and tool options for customers developing Internet of Things (IoT) applications. With a single software architecture, modular development kits and free software tools for every point in the design lifecycle, the SimpleLink MCU ecosystem allows great code reuse across the portfolio of microcontrollers; which supports a wide range of connectivity standards and technologies including RS-485, Bluetooth low energy, Wi-Fi®, Sub-1 GHz, LoWPAN, Zigbee®, Ethernet, Thread, RF4CE and proprietary RF. SimpleLink MCUs help manufacturers easily develop and seamlessly reuse resources to expand their portfolio of connected products.

TI and IEEE CEDA bring you the opportunity to get the tools, training and participate in an exciting challenge all for free!

Location: ICCD, room "Konferenz 6"

Agenda
Monday, 9:30 am – 12:30 pm
- Introduction to SimpleLink Technology
- Description of development tools
- Hands-on exercises with TI Senior System Engineer
- Practical information for the challenge
- Q&A

Monday, 13:30 – 17:30
- Participation in student challenge
- Students will develop a cloud project using TI Development tools, including CCS cloud, GUI Composer, Sensor BoosterPack, and Launchpad boards.
- Participants will program TI LaunchPad™ development kits to connect and send sensor data to a gateway via SubGHz RF, and then ultimately to the cloud.
- The challenge will lead students to the ultimately find the data in the cloud, display it locally on a PC, and find the code that will unlock the prizes for the winning teams.

Keynotes at DATE 2018
2018-01-22

TUESDAY OPENING CEREMONY (Session 1.1 - 08:30–10:30 in room "Großer Saal")

1st Keynote: The Responsibility Sensitive Safety (RSS) Formal Model toward Safety Guarantees for Autonomous Vehicles

Prof. Amnon Shashua, CEO & CTO, Mobileye, an Intel company, and Senior Vice President, Intel Corporation, US

Abstract: In recent years, car makers and tech companies are racing toward self-driving cars. A critical component in getting society acceptance to the technology is to find a way to guarantee safety. The prevailing common wisdom is a data-driven empirical approach for safety validation where the more mileage driven the better the maturity of the system must be. I will describe a model in which the sources of errors due to Planning (the actions and decisions for negotiating motion in traffic) can be fenced out from the data driven approach through a formal model of the common sense behind human judgment of what it means to cause an accident and how to define actions that will guarantee that the AV will never cause an accident due to Planning. The model creates a clear distinction of what can be certified by regulators and what should be left to the judgment of AV manufacturers. The RSS model also puts in context the conversation of “ethical dilemmas” by providing a formal framework for the discussion.

Bio: Prof. Amnon Shashua holds the Sachs chair in computer science at the Hebrew University of Jerusalem. His field of expertise is computer vision and machine learning. For his academic achievements he received the MARR prize Honorable Mention in 2001, the Kaye innovation award in 2004, and the Landau award in exact sciences in 2005. In 1999 Prof. Shashua co-founded Mobileye, an Israeli company developing a system-on-chip and computer vision algorithms for a driving assistance system, providing a full range of active safety features using a single camera. Today, approximately 20 million cars from 25 automobile manufacturers rely on Mobileye technology to make their vehicles safer to drive. In August 2014, Mobileye claimed the title for largest Israeli IPO ever, by raising $1B at a market cap of $5.3B. In addition, Mobileye is developing autonomous driving technology with more than a dozen car manufacturers. The introduction of autonomous driving capabilities is of a transformative nature and has the potential of changing the way cars are built, driven and own in the future. In August 2017, Mobileye became an Intel company in the largest Israeli acquisition deal ever of $15.3B. Today, Prof. Shashua is the CEO and CTO of Mobileye and a Senior Vice President of Intel Corporation leading Intel’s Autonomous Driving Group. In 2010 Prof. Shashua co-founded OrCam which harnesses computer vision and artificial intelligence to assist people who are visually impaired or blind. The OrCam MyEye device is unique in its ability to provide visual aid to hundreds of millions of people, through a discreet wearable platform. Within its wide-ranging scope of capabilities, OrCam’s device can read most texts (both indoors and outdoors) and learn to recognize thousands of new items and faces.
2nd Keynote: Programming Living Cells: Design automation to map circuits to DNA
Christopher Voigt, Professor of Biological Engineering at MIT, US

Abstract: Platforms are being established to facilitate large genetic engineering projects. A desired cellular function is divided into systems that can be developed independently and then combined. Genetic sensors allow cells to receive environmental and cell state information. Sensory information is integrated by genetic circuits, which control the conditions and timing of a response. The circuit outputs are connected to actuators that control what the cell is doing, from building molecules to moving and communicating. Design automation tools from the electronics industry are applied to map a circuit design to a DNA sequence. Collectively, this enables a wide range of applications, for example cells that communicate to build a material, navigate the human body to treat a disease, or protect plants by responding to the environment.

Read more ...

Bio: Christopher Voigt, PhD is a Professor of Biological Engineering at MIT. He is the Co-Director of the Synthetic Biology Center and co-founder of the MIT-Broad Foundry. He is the Editor-in-Chief of ACS Synthetic Biology. He holds joint appointments at the Broad Institute, Lawrence Berkeley National Labs, Korea Advanced Institute of Science & Technology (KAIST), University of California – San Francisco, and Imperial College. He received his BSE in Chemical Engineering from the University of Michigan (1998) and PhD in Biophysics from Caltech (2002). He is a founder of Pivot Bio (microbial agricultural products) and Asimov (genetic circuit design automation). He has served on the science advisory boards of DSM, Bolt Threads, Pivot Bio, SynLogic, Amyris Biotechnologies, Zymergen, BioNexus, and Twist Bioscience. He has been honored with a National Security Science & Engineering Faculty Fellowship (NSSEFF), Sloan Fellow, Pew Fellow, Packard Fellow, NSF Career Award, Vaughan Lecturer, MIT TR35, and SynBiobeta Entrepreneurial Leadership Award.

WEDNESDAY Lunchtime (Session 7.0 – 13:50-14:20 in room "Saal 2") supported by IEEE CEDA

3rd Keynote: From inverse design to implementation of robust and efficient photonics for computing
Jelena Vuckovic, Stanford University, US

Abstract: It is estimated that nearly 10% of the world electricity is consumed in information processing and computing, including data centers [D.A.B. Miller, Journal of Lightwave Technology, 2017]. It is clear that the exponential growth in use of these technologies is not sustainable unless dramatic changes are made to computing hardware, in order to increase its speed and energy efficiency. Optical interconnects are considered a solution to these obstacles, with potential to reduce energy consumption in on-chip optical interconnects to atto-Joule per bit (aJ/bit), while increasing operating speed beyond 20GHz. However, the state of the art photonics is bulky, inefficient, sensitive to environment, lossy, and its performance is severely degraded in real-world environment as opposed to ideal laboratory conditions, which has prevented from using it in many practical applications, including interconnects. Therefore, it is clear that new approaches for implementing photonics are crucial.

We have recently developed a computational approach to inverse-design photonics based on desired performance, with fabrication constraints and structure robustness incorporated in design process. Our approach performs physics guided search through the full parameter space until the optimal solution is reached. Resulting device designs are non-intuitive, but are fabricable using standard techniques, resistant to temperature variations of hundreds of degrees, typical fabrication errors, and they outperform state of the art counterparts by many orders of magnitude in footprint, efficiency and stability. This is completely different from conventional approach to design photonics, which is almost always performed by brute-force or intuition-guided tuning of a few parameters of known structures, until satisfactory performance is achieved, and which almost always leads to sub-optimal designs.

Apart from integrated photonics, our approach is also applicable to any other optical and quantum optical devices and systems

Details for Session 7.0

Bio: Jelena Vuckovic (PhD Caltech 2002) has been a faculty member at Stanford since 2003, where she is currently a Professor of Electrical Engineering and by courtesy of Applied Physics, and leads the Nanoscale and Quantum Photonics Lab. She has received numerous awards, including the Humboldt Prize, the Hans Fischer Senior Fellowship (from the Institute for Advanced Studies at the Technical University in Munich), the Presidential Early Career Award for Scientists and Engineers (PECASE), DARPA and ONR Young Faculty Awards. Vuckovic is a Fellow of the American Physical Society (APS) and of the Optical Society of America (OSA).

THURSDAY Lunchtime (Session 11.0 - 13:20-13:50 in room "Saal 2")

4th Keynote: Autonomous driving: ready to market? Which are the remaining top challenges?
Thomas Form, Head of Electronics and Vehicle Research, Volkswagen AG, DE and co-ordinator of the Pegasus research project on safety of automated driving
Out of a total of 766 paper submissions received, a large share (39%) is coming from authors in Europe, 26% of submissions are from the Americas, 34% from Asia, and 1% from the rest of the world.

DATE 2018: Advance Programme available online at https://www.date-conference.com/conference/event-overview

DATE 2018 in Dresden: Highlighting Future and Emerging Technologies and Designing Autonomous Systems

Initial submissions are still accepted until Wednesday, January 17, 2018 23:59:59 CET!

This is the Call for Demonstrations for the University Booth at DATE 2018 in Dresden, Germany! The University Booth fosters the transfer of academic work to industry. Prototypes are valuable demonstrators to express and compare the competitiveness of new EDA methodologies and hardware solutions. DATE 2018 features the University Booth in the exhibition hall of the conference venue. Universities and public research institutes are invited to submit their hardware platforms, prototype tools and pre-commercial results for DATE 2018 in Dresden, Germany.

DATE 2018 in Dresden: Highlighting Future and Emerging Technologies and Designing Autonomous Systems

2017-12-20

DATE 2018: Call for Demonstrations

2017-08-25

DATE 2018: Call for Demonstrations

University Booth at DATE 2018: Call for Demonstrations

2017-08-25

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DATE 2018 in Dresden: Highlighting Future and Emerging Technologies and Designing Autonomous Systems

2017-11-17

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This distribution clearly demonstrates DATE's international character, global reach, and impact.

The largest number of papers were received in the following topics:

**D Track:**
- Topic DT6 – “Design and Test of Secure Systems”
- Topic D8 – “Architectural and Microarchitectural Design”

**A Track:**
- Topic A7 – “Applications of Emerging Technologies”

**T Track:**
- Topic T1 – “Modeling and Mitigation of Defects, Faults, Variability, and Reliability”

**E Track:**
- Topic E1 – “Real-time, Networked, and Dependable Systems”

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Source URL: https://past.date-conference.com/date18/node