Summary of the 1st ICSSP-ICGSE Joint Event

[Co-located with ICSE 2020]

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Having the common objective of bringing together researchers and industry practitioners to share their research findings, experiences, and new ideas as well as sharing topics of interest, the organizing committees of the 14th International Conference on Software and System Processes (ICSSP) and the 15th International Conference on Global Software Engineering (ICGSE) ceased the opportunity to explore the idea of bringing together the two communities once it was clear that the International Conference on Software Engineering and all its co-located events had to be redesigned as online events.

Therefore, the 2020 edition of ICSSP and ICGSE was held on June 26-28, 2020 as a joint virtual conference under the overarching themes: *"Synergies of AI, Serverless, and Software and Systems Processes"* and *"Human-centered Global Software Engineering"*.

The remainder of this summary will detail the joint event keeping data separated for the two conferences when relevant.

Organization

The joint event was organized by the general chairs and program chairs of ICGSE and ICSSP.

The organizing committee of ICGSE comprised Paolo Tell (IT University of Copenhagen) as general chair, Igor Steinmacher (Northern Arizona University) and Ricardo Britto (Ericsson & Blekinge Institute of Technology) as program co-chairs, Josiane Kroll (University of Manitoba) and Anna Filippova (GitHub) experience report co-chairs, as well as, Igor Wiese (Federal University of Technology - Paraná (UTFPR)), Gustavo Pinto (Universidade Federal do Pará - UFPA), and Aivars Sablis (Blekinge Institute of Technology) as proceedings chair, social media chair, and web master respectively. Finally, the regional industry liaison role from last year was kept and coupled with the regional academic liaison. The members of the program committee of the main research track and the regional industry and academic liaisons are listed in Table 1.

The organizing committee of ICSSP comprised David Raffo (Portland State University) and Liguo Huang (Southern Methodist University) as general co-chairs, Eray Tüzün (Bilkent University) and Paul Clarke (Dublin City University) as program co-chairs, Guoping Rong (Nanjing University) as doctoral symposium chair, Ita Richardson (Lero - The Irish Software Research Centre and University of Limerick) as panel chair, as well as, Reda Bendraou (Sorbonne University & Paris Nanterre University) as publicity chair, Xin Chen (Hangzhou Dianzi University) and Dongjin Yu (Hangzhou Dianzi University) as web co-chairs, and Tao Yue (Nanjing University of Aeronautics and Astronautics & Simula Research Laboratory) as local arrangement chair. Finally, the members of the program committee of the main research track and of the doctoral track are listed in Table 2.

Key Figures

ICSSP received a total of 56 submissions across the different tracks out of which 21 contributions were accepted: main track 19 (1 short) (37% acceptance rate), and doctoral track 2.

ICGSE received a total of 40 submissions across the different tracks out of which 19 contributions were accepted: research paper track 8 (1 short) (32% acceptance rate), experience report track 10, industry talk track 1, and journal first track 1.

Finally, attendance to the joint event has been very satisfying. In total, we had 113 registrations, with maximum participation to the five sessions ranging from 80 to 119[1].

1. SUMMARY OF THE PROGRAM

The program comprised: 2 outstanding keynotes, 27 technical presentations, 11 industry presentations, 2 doctoral track presentations, and 1 Journal first presentation. Given the significant number of contributions, the program was organized in five 3-hour sessions, each having one thematic focus from both ICSSP and ICGSE collecting contributions from the various tracks. After the presentation of the two distinguished keynotes, these are hereafter briefly introduced.

1.1 Keynotes

Opening the first session, the first keynote was Prof. James Herbsleb from the Institute for Software Research in the School of Computer Science at Carnegie Mellon University. The presentation titled "Global Software Engineering in the Age of GitHub and

[1]A few organizers logged into the sessions with more than one device for technical reasons.

Table 1: Industry Liaisons, Academic Liaisons, and Program Committee Members of ICGSE 2020.

Academic Liaisons	Industry Liaisons
Alberto Avritzer	Johan Christensson
Kelly Blincoe	Dongwon Hwang
Akinori Ihara	Gleydson Lima
Lincoln Souza Rocha	V. S. Mani
Darja Šmite	Shinobu Saito

Program Committee Members

Akinori Ihara	Eduardo Figueiredo	Marco Gerosa
Alberto Avritzer	Fabio Calefato	Marco Kuhrmann
Alexander Nolte	Filippo Lanubile	Maria Paasivaara
Alpana Dubey	Guilherme A. Avelino	Martin Naedele
Anh Nguyen Duc	Hideaki Hata	Muhammad Usman
Aurora Vizcaíno	Iftekhar Ahmed	Nazareno Aguirre
Awdren Fontão	Igor Wiese	Nils Brede Moe
Ayushi Rastogi	Ita Richardson	Pooyan Jamshidi
Ban Al-Ani	Ivana Bosnić	Raula G. Kula
Bedir Tekinerdogan	Juho Mäkiö	Sarah Beecham
Casper Lassenius	Julian Bass	Sebastian Baltes
Christoph Treude	Jürgen Münch	Stefanie Betz
Daniela Damian	Klaas-Jan Stol	Steven D. Fraser
Daniela S. Cruzes	Leonardo Murta	Tayana Conte
Darja Šmite	Leticia S. Machado	Tony Clear
David Redmiles	Lincoln S. Rocha	Viktoria Stray
Davide Fucci	Mahmood Niazi	Yan Wang
Deepika Badampudi	Mansooreh Zahedi	
Denae Ford	Marcelo Cataldo	

Zoom. How collaboration technologies and the main-streaming of open source have changed global software engineering." follows Prof. Herbsleb contribution to the very first 2006 ICGSE keynote and reflects on the rapid evolution of GSE. "The tools we use have changed, and collaboration across distance has become vastly easier in many ways, yet stubbornly difficult in others." Deepening the reflection, Prof. Herbsleb emphasized the "pervasive impact" that the software we make has "in shaping the society we live in", and, consequently, stressed the importance of "our sense of responsibility and our understanding of what it means to be a developer or a researcher".

Opening our last session, the second keynote was Prof. Yuriy Brun from the University of Massachusetts at Amherst. The presentation was titled, "Preventing Undesirable Behavior of Intelligent Machines". The talk dove tailed with Prof. Herbsleb's keynote presentation perfectly, as while Prof. Herbsleb's talk raised many interesting questions about the unintended consequences of AI and machine learning (ML) programs and technologies, Prof. Brun's presentation elevated and added rigor to the conversation. In his talk, Prof. Brun set the context "that Modern software contributes to important societal decisions, and yet we know very little about its fairness properties." "Can software discriminate?" "yes." Prof. Brun laid out numerous examples of systems that have the opportunity to discriminate while making decisions, and it is essential (and complex) to discern what distinguishes necessary discrimination from bias and unfairness.

1.2 The Thematic Sessions

[Session 1][ICGSE]—Software development communities. Communities are a crucial structure in software development; their identification and support was the focus of this block. Almarimi presented their work on detecting community smells [1], and Constantino reported on their interview study aimed at deepening our understanding of collaborative software development [2]. Closing the block, Calefato summarized results from their case study on tool support for collaboration in agile [3].

[Session 1][ICSSP]—Software engineering process related case studies. This year, there were several case studies related to software engineering processes. Mattos [4] presented a case study describing the use of continuous experimentation practices within several products, teams, and areas inside Ericsson. Padmalata [5] maps out the existing process infrastructure support in industry practice and proposes a roadmap for digital re-imagination of software and systems processes. Closing the block, Mayr-Dorn [6] described their approach of pairing process metrics with visual historical inspection of issues in an industrial case study.

Table 2: Program Committee Members of ICSSP 2020.

Program Committee Members

Ove Armbrust	Graham Hellestrand	Tijs Slaats
Sarah Beecham	Daniel X. Houston	Klaas-Jan Stol
Paula Berman	Liguo Huang	Stanley Sutton
Andrea Burattin	Hajimu Iida	Binish Tanveer
Danilo Caivano	Jacky Keung	Paolo Tell
Josep Carmona	Jil Klünder	Ayse Tosun
Moharram Challenger	S. Koolmanojwong	Eray Tüzün
Paul Clarke	Marco Kuhrmann	Qing Wang
Claudio Di Ciccio	Stephen MacDonell	H. Washizaki
C. Di Francescomarino	Raymond Madachy	Dietmar Winkler
Michael Felderer	Fabrizio Maria Maggi	Krzysztof Wnuk
Davide Fucci	Jürgen Münch	Rebekka Wohlrab
L. García-Bañuelos	J. Nakatumba-Nabende	Murat Yilmaz
Görkem Giray	Leon Osterweil	Dongjin Yu
C.G. von Wangenheim	Mushtaq Raza	Jason Zhang
Regina Hebig	Stefan Sauer	
Jens Heidrich	Walt Scacchi	

Program Committee Members for Doctoral Track

Ove Armbrust	Antonia Mas	Haifeng Shen
Jidong Ge	A.L. Mesquida Calafat	Stanley Sutton
Marco Kuhrmann	Jürgen Münch	Paolo Tell
Jingyue Li	So Norimatsu	Murat Yilmaz
Peng Liang	Guoping Rong	He Zhang
S.T. MacMahon	Mercedes Ruiz	

[Session 2][ICGSE]—Trust and culture in GSD. Trust and culture are topics that continues to get attention in the GSE community. Kabbur described how trust is prioritized in their industrial context [7], and Fontao presented their results on value creation for third-party developers [8]. Starting the third block of the session, Jolak reported on their multiple case study investigating the different use of design thinking in software design between co-located and distributed teams [9], while Matthiesen shed light on their work on implicit bias highlighting activities undertaken to reduce negative stereotyping [10]. Closing the block, Ruane and Smith detailed their experience in developing a conversational agent with a globally distributed team [11].

[Session 2][ICSSP]—Enterprise processes for Agile and DevOps. Agile and DevOps continue to be topics of significant interest in our community. Gilson [12] proposes a technique to automatically transform textual user stories into visual use case scenarios in the form of robustness diagrams (a semi-formal scenario-based visualisation of workflows). Shahin [13] performed an industrial case study that has empirically identified and synthesized the key architectural decisions considered essential to DevOps transformation by two software development teams. Azeem [14] propose an approach, called CARTESIAN (aCceptance And Response classificaTion-based requESt IdentifcAtioN) modeling the pull request recommendation. Shang [15] discussed the occurrence frequency of test cases for the first time. In the closing, Zhou [16] introduced his doctoral research on the use of gray literature in the software engineering community.

[Session 3][ICGSE]—Onboarding and community evolution. Successful onboarding and well-functioning communities are associated with high-performance in software development. Both topics have gotten more attention in our community in recent years. Abhinav presented a framework for task recommen-

dation in crowdsourcing [17]; Mueller presented their journal first work on community development in open source [18]. Following, Cunha presented their experience report on the identification of difficulties faced by new project leaders [19], and Harty detailed his experience with designing onboarding for more than 60 nationalities [20].

[Session 3][ICSSP]—Machine Learning, AI and Microservices Architectures. Machine learning, AI and Microservices is getting an increased interest in the last few years. Wang [21] started of the session by describing their framework and corresponding development process which eliminates delays brought by the uncertainty of a project at a relatively early stage in microservices development. Daun [22] reported on a controlled experiment whose results indicate that instance-level review diagrams have – compared to type-level diagrams – important positive effects on reviewing processes for behavioral specifications of cyber-physical systems. Dominic [23] proposed a conversational bot which can help onboard new comers to a software project instead of an experienced programmer. Munappy [24] proposed an evolution model describing a stairway with five steps showing how DataOps was evolved. Hebig [25] performed an interview study with 16 participants, focusing on emerging and changing task. Finally, John[26] presented a multiple-case study approach to explore the different activities and challenges data scientists face when developing ML/DL models in software-intensive embedded systems.

[Session 4][ICGSE]—Process and requirements. Processes and requirement engineering continue to be topics of significant interest in our community. This year, Goncalves presented two experience report in the context of mobile ecosystem for the definition of requirements [27] and compliance with local regulations [28]. M. Venkataraman started the third block by giving a talk on his work at Accenture in collaboration with R. George titled "Observability Driven Development and Continuous Delivery". Following, Pandya gave account of their experience on expanding the responsibility in a distributed SAFe context [29]; and Saito closed the block presenting their work on hybrid sourcing [30].

[Session 4][ICSSP]—Empirical studies and experience reports on agile and hybrid processes. Hybrid processes are very common in modern software development. Li [31] presented an industrial modeling project as an exemplar to demonstrate and discuss the technical issues and challenges associated with hybrid process simulation in practice. Prenner [32] presented the results of their systematic literature review to gather descriptions of hybrid approaches. Klunder [33] discussed the use of hybrid methods based on 829 data points from a large-scale international survey. Kasauli [34] presented a catalogue of islands and the boundary objects between them based on a multiple case study. Finally, Prenner [35] in this doctoral research, discussed how the hybrid development approaches (i.e., agile and plan-based) are organized and what are their challenges.

[Session 5][ICGSE]—Tools for GSD. Aiming at mitigating the negative impact of distances in global distributed projects, contributions presenting tools and their use are regularly part of ICGSE. This year, Gupta described their experience in scaling AI-powered distributed software product [36], and Barbosa reported on the work with colleagues on the development of a release management tool for GSE [37]. Closing the block, Marquez presented their work on training through a serious game [38].

[Session 5][ICSSP]—Applied Software Engineering Practices. In this session, Mortada [39] presented their observations on deviations from the Scrum process in two companies. Hildebrandt [40] reported on a new approach to co-creating adaptive case management systems jointly with end-users, developed in the context of the Effective co-created and compliant adaptive case Management Systems for Knowledge Workers research project.

1.3 Awards

An ACM SIGSOFT-sponsored award for the best paper of ICSSP and for the best academic paper in the research track of ICGSE was arranged. ICSSP awarded [15], while ICGSE [1].

Similarly, ICGSE continued last year initiative of an IEEE Software-sponsored award that was assigned to the paper from the experience report track with the highest relevance for industrial practices. The award was given to [27].

2. FUTURE

In making plans for 2021, ICSSP and ICGSE have received a lot of feedback from friends and colleagues both anecdotally and via a survey that was offered to conference participants. The feedback was overwhelmingly positive. People greatly appreciated the combination of ICSSP and ICGSE into one joint conference. As a result, the Steering Committees for both conferences have voted that in 2021, ICSSP and ICGSE will again offer a joint conference event co-located with ICSE in Madrid.
Stay tuned for more announcements.

3. ACKNOWLEDGMENTS

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