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# Understanding research about software developers around the world amidst global pandemics and crises

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**Abstract.** Multiple waves of the COVID-19 pandemic, social unrest, global economic crisis, and mental health issues have caused modifications to developer work practices, which presents an emergent need to understand its impact on research *about* developers. The aim of this workshop is to bring together researchers from academia and industry to discuss the current state of research about developers, questions asked or problems addressed, strategies applied, and to share successes and failures in the form of 'lessons learnt'. We are also interested in observations about new practices and processes adopted by developers in the field during these crises. We hope to capture a set of (i) observations in developer practices, consequently leading to shifts in research problems of interest, and (ii) suggestions for best practices and strategies that can be adopted by researchers to effectively plan and execute research about developers amidst and post global crises.

## Background

Government-mandated lockdowns, global economic crises, and several other events have influenced a shift to an unconventional work setting, affecting the wellbeing and productivity of developers (e.g., software engineers, data scientists,

analysts, etc.) and researchers who study them. The world has switched to working from home, with an increased demand for supporting new technology innovations to keep the world functioning. Researchers studying developers focus on understanding developers' work practices, their perceived usability of programming language(s) and tool(s), their usage of collaborative tools, their learning approaches adopted to support programming, etc. (e.g., Al-Ani et al., 2008; Bird et al., 2009; Bjørn et al., 2014; Carter et al., 2015; Gupta et al., 2009; Gutwin et al., 2002; Myers et al., 2016; Tang et al., 2011; Wang et al., 2020). As such, a research study about developers would normally include both in-person and remote observations of developer behavior, oftentimes also including the capture of developers' perceptions and needs, using techniques such as surveying, semi-structured interviews, etc. A global shift to work from home has essentially pushed researchers to adopt methodologies that can primarily support remotely capturing research insights. For instance, observation of developers' workflow and collaborations are challenging as in-person and field research are prohibited in most situations. Remote research can be seen as an opportunity to scale research to regions that might have been difficult to achieve with in-person user research, but it can introduce planning and facilitation issues. For instance, setting up a programming environment with experimental tools that are early in development may not necessarily be publicly available, thus making the study setup cumbersome.

An emergent theme on remote work by developers alludes to the insight that working from home while being quarantined during a pandemic is *not* the same as remote work (Bao et al., 2020; Bezzera et al., 2020; da Camara et al., 2020; Ford et al., 2020; Ganguly et al., 2020; Ralph et al., 2020; Machado et al., 2020; Miller et al., 2021; Moster et al., 2021; Oz & Crooks, 2020; Rodeghero et al., 2020). This insight provokes the question on how the series of world events has influenced developer's work practices, research about developers, their approaches, and the questions/problems that are being addressed in this new world. The aim of this workshop is to bring together researchers from academia and industry to discuss the current state of research about developers, strategies applied, successes and failures in the form of "lessons learnt," and new practices and processes adopted by developers in the field in a world that is plagued by human and economic disasters. We hope to create a forum for researchers to

collaboratively brainstorm and generate a list of (i) new research questions/problems that are being addressed, and (ii) best practices and strategies that can be added to what is already known for effectively planning and executing research on distributed work amidst and in the post-pandemic world.

## Workshop goals

This workshop aims to bring together researchers who study developers to examine, and discuss the current state of research about developers. Specifically, we have the following goals in the context of global crises:

- Identify the approaches researchers adopted for understanding and measuring developer needs, wellbeing, collaboration, and productivity.
- Reflect on how current practices for team bonding, coordination and collaboration have changed, and how the new practices have influenced and transformed research methodologies in the new, unconventional work settings.
- Provide inspiration from cross-geographical perspectives by sharing experiences, resources, and strategies researchers have adopted.
- Leverage discussions from the workshop to generate a list of (i) new observations made in developer practices, consequently leading to shifts in research problems of interest, and (ii) known best practices/strategies for planning and executing research about developers both during and post global crisis.

We believe our discussions will result in deeper understanding of strategies and techniques researchers can adopt, not only to lower burdens in their work but also to become aware of emerging research techniques from a global perspective to support their work.

## Workshop structure

- The workshop will be open to everyone interested in and pursuing research about developers and specifically the goals listed above. In total, we expect to attract up to 20 attendees including the organizers.

- Position and works-in-progress papers will be made available to attendees in advance of the workshop. All attendees are expected to have read the papers to be able to actively engage in discussions.
- The workshop website will be used as a portal to make announcements and promote calls for participation:  
<https://sites.google.com/view/ecscw21-research-in-crisis>.

The workshop schedule is summarized in Table I. A summary of the results will be made available after the workshop on the workshop website. Further, the workshop organizers and the authors of the talks will compose a joint article, to report on the workshop and its outcomes, to be submitted to the Computer Supported Cooperative Work (CSCW) journal.

Table I. Workshop Schedule (CET)

16:00 - 16:15	Meeting all participants + Tech setup (ensure video conferencing works for remote attendees)
16:15 - 16:30	Welcome and introduction
16:30 - 17:20	10-minute talks (5 talks)
17:20 - 17:30	Break
17:30 - 18:15	Group work including discussions on current state of the research about developers, research in post-pandemic world, and other topics based on the submitted manuscripts
18:15 - 18:45	Final summary and discussions for working manuscript that will be an outcome of the workshop
18:45 - 19:00	Closing remarks

## Call for participation

This 3-hour workshop will bring together researchers and practitioners studying developers to learn more about the current state of research amidst a pandemic, global economic crisis, and social unrest. Our intention is to examine and discuss strategies adopted, lessons learnt, and brainstorm how research about developers has changed.

We invite researchers from academia and industry pursuing research about developers to submit original contributions on the problem they were attempting to learn, the research methodology that was adopted, and the results discovered about how developer practices and processes have changed. This includes researchers studying work practices in programming environments, programming language design, API usability, usability of programming tools, onboarding of new developers into remote teams, etc. We specifically encourage participants to reflect on the importance of the research questions addressed in their research and lessons learnt from the methodology adopted.

The manuscripts should not be anonymized and will be reviewed by members of the program committee. Submissions will be selected based on their relevance to the workshop goals.

At least one author of accepted manuscripts will be required to register and attend the workshop. Manuscripts will be made available to attendees in advance of the workshop. All attendees are expected to have read the papers to be able to actively engage in group discussions.

Submissions can be 2-4 pages long (including references) and should follow the ECSCW template ([RTF](#), [MS Word](#), [LaTeX](#)). Manuscripts should be submitted as email attachments in PDF format to the workshop organizers at [ecscw21.workshop@gmail.com](mailto:ecscw21.workshop@gmail.com) by March 28, 2021. More details about the workshop can be found at the workshop website:

<https://sites.google.com/view/ecscw21-research-in-crisis>.

## Important Dates

Submission Deadline: March 28, 2021

Notification of acceptance: April 27, 2021

Workshop Date: June 7, 2021

## Organizers

**Preethi Srinivas** has been a User Experience Researcher at Google since 2018. Her work focuses on understanding and supporting the needs of mobile application developers. Her research interests lie at the intersection of software developer experience, programming environments, API usability, computer supported cooperative work, mobile computing, and ubiquitous computing.

**Brad A. Myers** is a Professor in the Human-Computer Interaction Institute in the School of Computer Science at Carnegie Mellon University, and has been researching developers and programming for over 40 years. He was chosen to receive the ACM SIGCHI Lifetime Achievement Award in Research in 2017, for outstanding fundamental and influential research contributions to the study of human-computer interaction. He is an IEEE Fellow, ACM Fellow, member of the CHI Academy, and winner of 16 Best Paper type awards and 5 Most Influential Paper Awards. He has been a consultant on user interface design and implementation to over 90 companies, and regularly teaches courses on user interface design and software. His research interests include user interfaces, programming environments, programming language design, end-user software engineering (EUSE), API usability, developer experience (DevX or DX), interaction techniques, programming by example, mobile computing, and visual programming.

**Youyang Hou** has been a User Experience Researcher at Google since 2017. Her work focuses on developer experience and developer tools in mobile development and cloud computing services. Her research interests include computer supported collaborative work, developer experience, IDE experience, creative computing, and hackathons. She obtained her PhD in Human Computer Interaction from the School of Information, University of Michigan.

## Program Committee

Steven Clarke (Microsoft)  
Michael Coblenz (University of Maryland)  
Youyang Hou (Google)  
Shriram Krishnamurthy (Brown University)  
Andrew Macvean (Google)  
Brad A. Myers (Carnegie Mellon University)  
Steve Oney (University of Michigan)  
Fabio Paterno (Consiglio Nazionale delle Ricerche)  
Elli Ponomareva (JetBrains)  
Martin P. Robillard (McGill University)  
Preethi Srinivas (Google)  
Chamila Wiyayarathna (University of Adelaide)

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