

4TU.NIRICT Community Fund 2020 – Final Report:

Self-Sustainable Computing

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In this 4TU.NIRICT project "Self-Sustainable Computing", we aimed to build up a collaborative research community on self-sustainable computing as a joint force to discuss, develop and demonstrate the future of self-sustainable computing systems and human-computer interfaces, which supports the deployment at scale. As a result, we organized two international workshops, CHIIoT 1 & 2 (<http://chiIoT.org/>). In spite of the challenges posed by COVID, the workshops successfully brought together more than 100 researchers and practitioners from industry and academia.



The CHIIoT workshop series brings together researchers and practitioners from human-computer interaction (HCI) design, computer science, and electrical engineering who are working on new challenges in industry and academia. The workshop provides a platform for participants to review and discuss challenges and opportunities in the intersection of computer-human interaction and the Internet of Things, focusing on human-centered applications using emerging connectivity and sensing technologies. We aim to jointly develop a design space and identify opportunities for future research—a community in which CHI and IoT researchers can exchange views and begin fruitful collaborations.

The 1st CHIIoT workshop (CHIIoT 1) took place on February 17, colocated with the International Conference on Embedded Wireless Systems and Networks (EWSN 2021) in Delft, Netherlands. The second workshop (CHIIoT 2) was co-located with EICS 2021: The 13th ACM SIGCHI Engineering Interactive Computing Systems (EICS) conference and took place on June 8, 2021, in Eindhoven, Netherlands. We invited position papers for both workshops on Computer Human Interaction in IoT Applications. The half-day workshops offered a cross-disciplinary forum of discussion and knowledge exchange for researchers in both fields, looking at the intersection of IoT and CHI, where IoT platforms focusing on human-centered applications and CHI studies using IoT solutions to build interactive environments. The workshop information was announced on our official website and the facebook page (Figure 1).



Free Registration Link

The 1st CHIIoT workshop (CHIIoT 1) will be held on Feb. 17, 2pm - 5pm (CET). Together with other co-sponsors (Huawei & CPI-lab), we make this CHIIoT 1 workshop FREE to attend! The registration is also free for all CHIIoT 1 participants to attend the main **EWSN 2021** conference and the co-located tutorials. Both CHIIoT 1 and the EWSN'21 conference will be held fully online, and more registration details can be found via the [Link](#)

In CHIIoT 1, we will use *Discord* with the *Zoom Webinar* for online discussions and face-to-face meetings. *Discord* provides a face-to-face experience during the coffee break and interactive poster presentations and a live texting channel for online and off-line discussions.



Figure 1: CHIIoT website (left) and facebook page (right)

Researchers from both Computer-Human Interaction and IoT Systems were invited to submit a 2-6 pages position paper to address one or more of the workshop's topics of interest or suggest another (we encourage visionary and provocative ideas). All submissions were reviewed by at least three members of the technical program committee and selected on the basis of quality and their background and perspective. We received 13 paper submissions in the first and 7 paper submissions in the second workshop. For the first workshop, 7 (out of the 13) papers were accepted for giving oral presentations, and 3 (out of the 13) papers were accepted for giving poster presentations. For the second workshop, 4 (out of the 7) papers were accepted for giving oral presentations. The accepted submissions nicely cover a wide variety of applications with the emerging IoT technology and its users.

The first CHIIoT workshop (CHIIoT1) received more than 200 online registrations and engaged around 75 live participants (Figure 2). The program is as follows:

- 1:00-2:00 Registration (via Discord)
- 2:00-2:30 Opening & CHIIoT 1 Best Paper Award (30 min)
- 2:30-2:40 Posters & B.Y.O.Coffee Break (10 min)
- 2:40-3:25 Session 1: IoT in Human-Centered Applications (45 min)
- 3:25-3:35 Posters Pitch (10 min)
- 3:35-4:00 Posters & B.Y.O.Coffee Break (25 min)
- 4:05-4:50 Session 2: CHI in IoT Applications (45 min)
- 4:45-4:50 B.Y.O.Coffee Break (5 min)
- 4:50-5:00 Closing, CHIIoT 1 Best Talk Award, and Outlook (10 min)

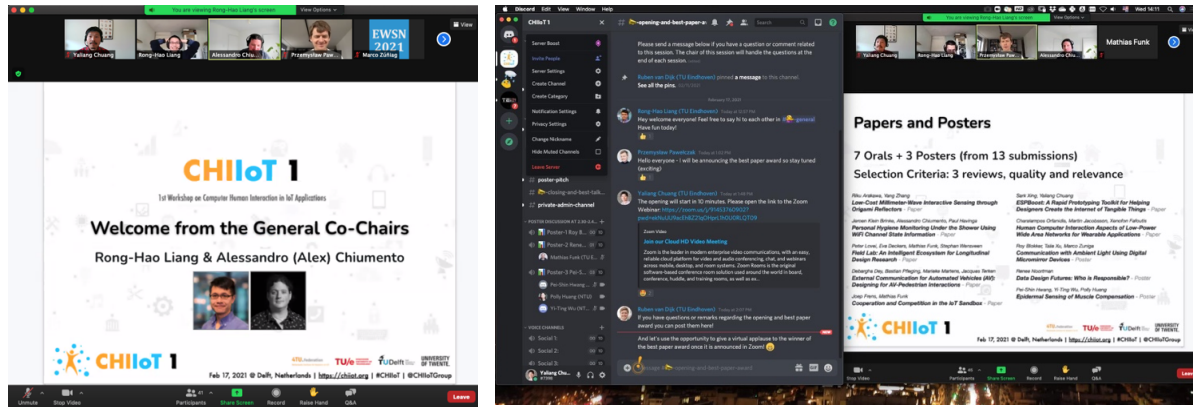


Figure 2: CHIoT 1 workshop

The second CHIoT workshop (CHIoT2) received more than 50 online registrations and engaged around 25 live participants. The program is as follows:

- 1:30-2:00 Registration @ Discord
- 2:00-2:05 Opening @ Zoom
- 2:05-2:45 Session 1: CHIoT Perspective Talks @ Zoom
- 2:45-3:00 B.Y.O.Coffee Break 1 @ Discord
- 3:00-4:20 Session 2: CHIoT 2 Papers @ Zoom
- 4:20-4:30 B.Y.O.Coffee Break 2 @ Discord
- 4:30-4:55 Panel Discussion: Designing for CHI x Engineering for IoT @ Zoom
- 4:50-5:00 Closing (5 min)

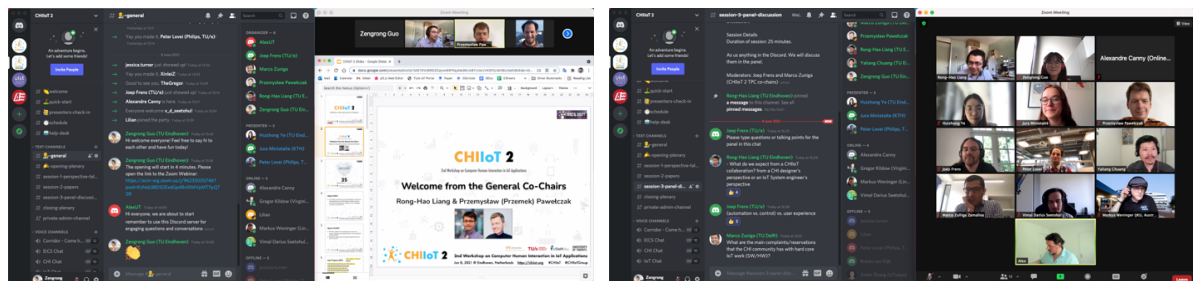


Figure 3. CHIoT 2 workshop

The proposals of both CHIIoT workshops are permanently archived by the ACM Digital Library (Figure 4). These twelve CHIIoT 2021 workshop papers and shorts are permanently archived in the CEUR workshop proceedings platform as open-access publications. The proceedings are available to access via the link: <http://ceur-ws.org/Vol-2996/> (Figure 5). We appreciate the 4TU.NIRICT community fund for supporting these activities.

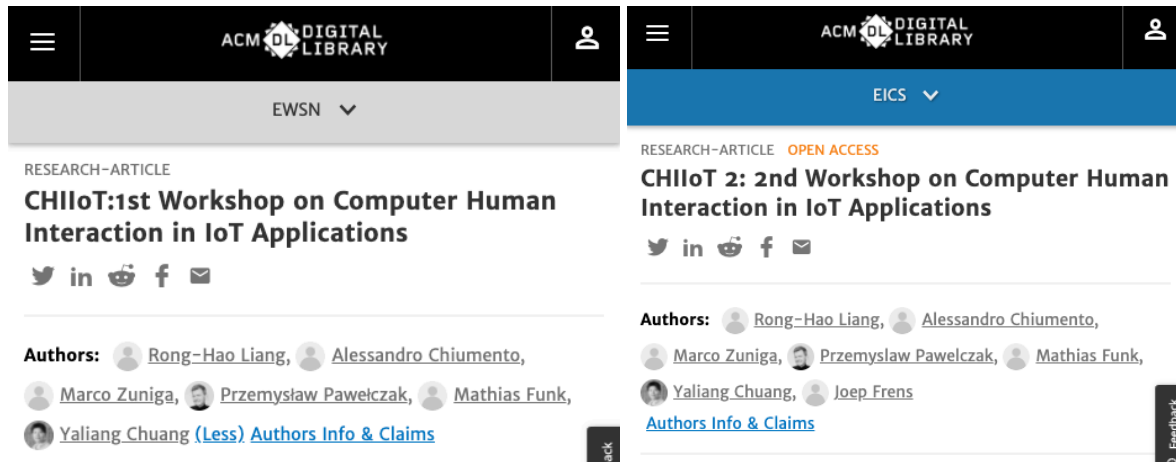


Figure 4. The workshop proposals in the ACM Digital Library



Figure 5. The workshop proceedings in the CEUR