

From: CHASE 2024 HotCRP noreply-chase2024@hotcrp.com 
Subject: [CHASE 2024] Notification of submission decision #95
Date: January 12, 2024 at 4:19 PM
To: Alexander Nolte alexander.nolte@ut.ee
Cc: birgitp@chalmers.se, k.stol@ucc.ie, amezasor@uci.edu, giuseppe.destefanis@brunel.ac.uk

Dear Alexander Nolte,

We regret to inform you that your paper "Investigating Design Requirements for Collaboration Analytics for Hackathons" has not been accepted for presentation at the conference. We would like to thank you for submitting to CHASE 2024.

All submissions were evaluated by at least 3 reviewers. Here are some key statistics from the submission and acceptance process:

Total received submissions: 58, of which 8 were desk rejected, and 1 withdrawn.

Short Papers: 20 submitted, 7 accepted (35% acceptance rate).

Full Papers: 29 submitted, 13 accepted (44.8% acceptance rate).

Overall: Out of 49 papers considered (short and full), 20 were accepted, resulting in an overall acceptance rate of 40.8%.

It is not unusual for reviewers to have different views, at which point some discussion would ensue. On occasion, an additional reviewer was invited. Whenever the decision required some justification, we aimed to provide a meta-review to explain why a paper was or was not accepted. However, not all papers received a meta-review.

We understand that this news is disappointing, but we hope the review comments provide useful feedback, and we encourage you to continue your research.

Thank you for your interest in CHASE 2024 and we hope of course to see you at CHASE, or at any of the other events co-located with ICSE.

Best regards,

Klaas-Jan Stol and Birgit Penzenstadler (Full Papers)
Adriana Meza Soria and Giuseppe Destefanis (Short Papers)

Review #95A

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Overall merit

2. Weak reject

Reviewer expertise

3. Knowledgeable

Paper summary

This short paper deals with the issue of the rapid establishment of collaboration methods and diverse support by mentors in the context of collaborative events such as Hackathons. In this context, it is often difficult to observe and analyze the group work to improve a team's interaction as collaborative events like Hackathons are often time-bound, and sometimes the team members even meet for the first time. While traditional methods like surveys or log file analysis exist to investigate a team's interaction and derive insights into group work patterns, these methods are limited regarding the depth and scope of the insights into team interactions. For this reason, the authors propose a comprehensive data collection approach including detailed observations, speech transcripts, and wearable badges. The authors analyze all this collected data using multimodal collaboration analytics and sociometric wearable devices to study human behavior in hackathons as one exemplary collaborative event.

The authors' main goal is to investigate how the technology needs to be designed to capture the collaboration and visualize the group interaction so that researchers and practitioners such as mentors can understand the collaboration even when they are absent. In this short paper, the authors present their iterative design approach for such a platform for collaboration analytics by showing initial findings, challenges, and open questions on how to study collaboration, especially in the context of hackathons.

Summary of rationale for recommendation

The beginning and middle of the paper are well-written by providing a good introduction to the topic, clarifying the study design, platform, and collection, and presenting several results in the analysis. However, the end of the paper of the paper lacks a stronger interpretation of the results, a more detailed discussion of the findings regarding the presented problem, and a conclusion. In particular, the last part is too weak due to a lack of space. On the one hand, this shortcoming results from the fact that the paper could have filled a full paper in terms of content and, on the other hand, that too much space (approximately 2 of 5 pages) was used for the diverse analysis results. As a result, the most important parts (interpretation and discussion) are neglected or missing completely, such as the conclusion. For this reason, this reviewer recommends to reject the paper.

Strengths

- Clear motivation and problem
- Clearly stated research questions
- Sophisticated prototype with comprehensive data collection

Weaknesses

- Missing information about data and platform (tool) availability
- The majority of the figures are not readable which makes it difficult to understand the presented explanations as a reader cannot easily interrelate the texts and figures.
- Many analysis results, but limited interpretation and discussion of the findings
- No conclusion

Motivation

The motivation of the paper is clearly described. However, the main part of the introduction with the authors' argumentation justifying their objective does not use any reference supporting their claims.
The authors must revise this part by providing suitable references supporting their claims.

Study design, execution, rigor

For a short paper, the authors provide sufficient details of their preliminary evaluation of their platform.
However, this reviewer lacks a data and tool availability statement and at best dataset and replication package.

Presentation

The authors did not use a structured abstract as recommended by CHASE. This reviewer suggests revising the abstract by using a structured abstract (Background, Objective, Method, Results, Conclusion).

Page 1: There seems to be an issue with one reference: "...with the aim to create (innovative) technology [18?],...". The authors need to check why there is a question mark after reference number 18.

Page 1: There is a sentence with: "...spread knowledge±[6,7]...". What does the plus-minus symbol mean?

Page 1: Missing space: "... (MMLA). Specifically,...".

The description of the structure of the work (at the end of the introduction) lacks references to the respective sections.

The table and several figures are presented before they are referenced in the text. These graphical elements must therefore be better positioned in the paper so that a reader knows when he or she has to consider a graphical element.

The majority of the figures (1, 3, 4, 5, 6, 7, 8) are not readable even with 150% zoom. These figures must be revised so that their texts are readable!

In addition, eleven figures are a lot for a short paper with 5 pages. This reviewer suggests selecting a more focused subset of the figures to save some space and using it for other content, such as more details on the data analysis methods, the selected metrics, and their interpretation.

The authors switch sometimes between the writing of Fig., Figure, and figure. The writing should be consistent.

There also seems to be an issue with the space before section 4.2. This author should check the formatting.

Why does section 4.1 have subsection 4.1.1 Video Analysis and 4.1.2 Audio Analysis, but Conversational Patterns is not a subsection also it follows the same formatting. Does the section lack its section number 4.1.3?

Comments for authors

Abstract:

Overall, the abstract is well-written and easy to understand. The authors highlight the problem and its rationale as well as their objective and method. Unfortunately, the abstract lacks details on the actual results and the authors failed to conclude.

For this reason, this reviewer suggests revising the abstract and using a structured abstract as recommended by the CHASE'24 conference. The use of a structured summary helps to ensure that all points important to the reader are addressed to get a good overview of the paper.

1. Introduction:

Good introduction to the topic of hackathons and the issue respectively opportunity to study how software development teams form and establish communication and collaboration.

In the introduction, the authors argue that most existing approaches are limited to studying hackathons by explaining their limitations and shortcomings to motivate their objective. Unfortunately, this entire paragraph lacks any reference to support the authors' argumentation. The reviewer asks the authors to back up their arguments with references, as otherwise, the statements are merely unsubstantiated claims. This use of references at this point is important to strengthen the authors' argumentation, as it forms the basis for the rest of the paper.

2. Methodological Approach - Design Approach:

This section is quite short. As it deals with the authors' design approach (research approach) it should cover all aspects, including, data collection and used materials, such as the developed platform. For this reason, this reviewer suggests combining section 2 and section 3 into one section. In this way, the authors cover all details about their design approach in a single section with an appropriate title.

3. Technology and Data:

As mentioned above, this reviewer suggests combining this section with section 2.

In addition, this reviewer has some further remarks.

Section 3.1 on the MMLA platform starts very technically (use of Arduino boards) and is very detailed before any larger overview of the general platform is given. This reviewer suggests providing first a more abstract overview of the platform before presenting its details, such as: "The platform uses four types of badges (vision, regular, RFID, and voice) as well as three different external sensors (webcam, RFID reader, microphone array) to acquire data that is further exchanged, processed and stored (see Figure 1)."

While the authors report in detail on the data collection and also introduce their analysis method (multimodal collaboration analytics) in the abstract, this reviewer lacks some details on the data analysis in the design section. It might be the case that the author combined this information with the initial results where they present the quantitative and qualitative analysis. However, if this is the case (this reviewer must still read the result section while writing this text), general information on the data analysis should not be mixed with the actual results, as it is not intuitive for a reader to search in the results section for details on the data analysis methods.

4. Initial Results:

Regarding the video analysis, this reviewer has some questions as the authors did not present any general details on their data analysis including the metrics that they use.

Why are the metrics "total movement in meters" and "normalized movement in meters per second" of interest? What do these metrics tell someone about interactions in a group? What does the observed difference in the average normalized movement level mean?

While the authors present the results, it is not clear to a reader why these numbers are important and how he or she has to interpret them.

Almost all explanations on the quantitative analysis are difficult to follow and understand as the corresponding figures are not readable. The author must revise all these figures as mentioned above.

First of all, this reviewer appreciates all the authors' efforts to present several examples from their detailed analysis. However, this reviewer lacks a better structure in the results that also includes a clear statement of their respective findings as summaries for the reader. In addition, the variety of examples that are always supported by at least one visualization requires a lot of space that the authors need for other content such as more information on the general data analysis methods, the data and tool availability statement, or a conclusion section (that does not exist).

5. Discussion and Challenges

This reviewer suggests removing the repetition of the research question and instead using a reference or hyperlink in the paper to point to the introduction. This space is needed for other information as explained above.

While the authors provide some insights as an answer to RQ1, the authors do not answer RQ2 as they do not specify in any way what types of visualization can represent the modalities. The authors presented several (probably too many) visualizations in their paper but did not answer why they used specific types and why these visualizations can represent the modalities.

The authors address the promised challenges and questions rather short and in a quite unstructured manner leading to the question: Are these all the challenges and questions?

For example, this reviewer misses a stronger discussion of the challenge of tracking people by asking them to wear these badges the entire time. How comfortable do participants feel when they have to wear these big badges and how does it affect them when they know that everything they say and do will be recorded?

Furthermore, this reviewer asks the authors to clarify what happens when one of the participants does not agree to be tracked, or recorded or does not want to wear the badge.

Can the system still be used? Probably only to a specific degree at all as the position of the camera seems to be important for the data synchronization and analysis.

Given these questions, this reviewer lacks a broader discussion of the approach and platform regarding the problem presented in the introduction.

This reviewer does not deny that such a system can be set up and even provide interesting insights. However, this reviewer questions the applicability of such a system and asks the authors to discuss this topic in their paper based on the results presented.

Review #95B

Overall merit

1. Reject

Reviewer expertise

2. Some familiarity

Paper summary

This paper presents an approach for researchers to gather data from hackathon participants. In particular, the presented PlaformX uses several sensors that can be collected and analyzed without the researchers needing to be onsite.

Strengths

- The topic of team collaboration is fitting for the conference
- The proposed approach can be helpful to CHASE researchers
- Multiple sensors used to extract potentially interesting information

Weaknesses

- Seems immature for this venue
- Lack of background theories about team dynamics and collaboration stages - Lack of in-depth discussion and limitation

Comments for authors

Introduction

- The main justifications for developing the approach are the claimed shortcomings of alternative methods. The authors mention, "Quantitative data collection approaches such as surveys and archival analysis of communication and collaboration traces (code repositories, document histories, and chats) also do not allow for on-the-fly analysis and only provide narrow insight into what happens between team members." This must be supported by a reference or an example explaining why that may happen. - The modalities that are planned to be captured should be quickly defined and explained. - RQ2 needs to be motivated. It needs to be clarified how it fits with RQ1. - RQ1 is a contextualized version of the main research question. I recommend removing the latter. - Given the specific motivation (collect data in absentia), the context (hackathon) is ill-selected. Hackatons last 1-2 days, making it easier to have observers. Team collaboration, for example, in a company, poses some of the challenges mentioned in the introduction. In other words, it is unclear why the proposed approach is specific to hackatons. ## Methodology

- Agile and "sketching with technology" are mentioned as broad approaches for the research design. However, design science is referenced in [1, 11, 24].
- The sampling procedure for selecting the team under study must be detailed. Several questions need to be answered: was the team chosen randomly? What characteristics of the group were used to select it? Why select only one team? - This section mentions that four multilingual teams were selected. However, the results are based on a single team of only Ukrainian speakers. - The role of the observer as a validator of the collected data should be described in Section 2.1; otherwise, its presence contradicts the goal stated in the research question.

Results

- The implication of the results needs to be explained. For example, "This represents an 8.06% increase in the level of translational movement when the furniture was movable." What is the implication for how teams collaborate? Notice that section 5.1 does not fulfill this but rather re-states the results.
- The metrics used should be reported and explained as part of the methodology. - It needs to be clarified how RQ2 is answered. The author

reports some visualizations of the data they collected, but there is no validation. What information is the visualization trying to convey? For whom? What are alternative ways of visualizing the same data? - The limitations of the study are missing. For example, what is the impact of the team knowing to be constantly observed on their work?

Minor comments

- I recommend phrasing the research question, "How can researchers study team collaboration without being present?"
- "(MMLA). [] Specifically,"
- I recommend using forward references in the last paragraph of the introduction section.
- Figure 8 is mentioned before Figure 7. Accordingly, the order of the figures needs to be swapped.
- The language is, at times, cumbersome. For example, "active discussion with a mentor while the mentor was trying to explain via explanations."
- The last line after the references need to be removed.

Review #95C

Overall merit

2. Weak reject

Reviewer expertise

1. No familiarity

Paper summary

The paper explores the challenges of studying collaboration in hackathons, where teams rapidly form to solve problems. Traditional methods like surveys fall short, prompting the introduction of a comprehensive data collection approach using observations, speech transcripts, and wearable badges. The study employs Multimodal Collaboration Analytics and Sociometric wearable devices to understand collaboration without prior team interactions. The paper discusses the iterative design of a collaboration analytics platform, presenting initial findings, challenges, and questions related to hackathon collaboration.

Summary of rationale for recommendation

The proposed idea of creating an open system for comprehensive data capture in hackathon teams is highly relevant. However, the paper has notable limitations in the current prototype's soundness, particularly regarding its applicability to measure actual team collaboration dynamics might have potential biases in communication patterns.

The identified weaknesses, such as the limited consideration of virtual arrangements, unclear participant selection criteria, and potential invasiveness of devices, should be addressed through further refinement in future work.

Strengths

- + High relevant
- + Easy to read
- + Evaluation of the prototype

Weaknesses

- Design of the setups
- Lack of theory behind some decisions
- Selection criteria for participants are unclear

Motivation

* The idea of creating an open system to capture collaboration data in hackathon teams is highly relevant. It addresses the current lack of comprehensive data gathering during team meetings.

* The motivation for the study was to design a system that can capture the dynamics of developers during hackathons. The overall goal is to use such systems to gather the dynamics of small groups in the future.

Study design, execution, rigor

* The current prototype's effectiveness in studying remote team collaboration is limited by its environment setup, which assumes face-to-face interactions and table-based work. This may pose challenges for future data collection.

* The setup of the five sessions may introduce biases in communication patterns, especially if some teams have members who are unfamiliar with each other initially, but others are not.

* The selection criteria for the 15 out of 35 participants need clarification.

* Participant feedback on the perceived invasiveness of the audio and vision badges shown in Figure 2 is missing. Future work should consider designing less intrusive devices.

* The paper should elaborate on the necessity of collecting various metrics, such as movement or body orientation.

Presentation

* Figure 1 needs improvement for better readability of the text next to the arrows. Figures 3 and 4 should have larger fonts too.

* The mention of ecological psychology in explaining results from RQ1 should be expanded upon for better understanding.

Minor:

- knowledge+6 71 -> what + means?

incomplete sentence

- [18?] - "Hackathons, by definition, are collaborative events during which 73 participants form small independent teams [22] to work on" -> incomplete sentence
- (MMLA). Specifically -> (MMLA). Specifically
- How do we study collaboration when we are not there?. -> How do we study collaboration when we are not there?

