

Lecture Notes in Networks and Systems 711

Kohei Arai *Editor*

# Intelligent Computing

Proceedings of the 2023 Computing  
Conference, Volume 1

 Springer

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Kohei Arai  
Editor

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Proceedings of the 2023 Computing  
Conference, Volume 1

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ISSN 2367-3370                      ISSN 2367-3389 (electronic)  
Lecture Notes in Networks and Systems  
ISBN 978-3-031-37716-7              ISBN 978-3-031-37717-4 (eBook)  
<https://doi.org/10.1007/978-3-031-37717-4>

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# Preface

With profound pride and privilege, we present before you the proceedings of the Computing Conference, 2023. It was held over two days from 22 to 23 June 2023 at London, UK, in a hybrid mode. The conference was hugely successful as it was attended by 200 delegates from more than 60 countries across the globe. The conference covered the whole gamut of topics ranging from Internet of Things, Artificial Intelligence, Ambient Intelligence, e-Learning and Machine Vision.

The conference provided a coveted platform to all the renowned and budding researchers and industry experts to voice their iconic, innovative and insightful research study. The synergy of studies made by the academia and industry experts is definitely going to give a great thrust to the technological advancement of the world.

The conference had four keynote addresses, paper presentations and engaging networking breaks for the delegates which allowed them to build long-term associations. We received a voluminous number of 539 paper submissions out of which we selected 193 papers on the criteria of originality, applicability and presentation. The selected papers provide a vast pool of knowledge and expertise in solving routine, repetitive and rigorous tasks. They are also a window to future living trend. The studies also gave an important thread for future research and beckoned all the bright minds to foray in those fields. The conference, without doubt, ignited a spark of great interest amongst its distinguished audience.

The astounding success of the conference would not have been possible without the precious contribution of many people. The key stakeholders were the authors who gave such thought-provoking studies. The arduous task of review and evaluation by the Technical Committee members cannot be overlooked. The session chair's role was noteworthy. We would extend our heartfelt gratitude to all the above key contributors. This note of thanks would be incomplete without the mention of our esteemed keynote speakers who enthralled everyone with their unique researches. The organizing committee's efforts cannot go un-noticed as they managed seamlessly such a huge event and that too in hybrid mode. Our special thanks to them as well.

We have sincerely endeavoured to publish the cherry-picked studies for our avid scientific readers. The encouraging response by our authors, participants and readers is indeed our dose of motivation. We hope to continue bringing the most unique and path-breaking researches in future as well with your enthusiastic support.

Kohei Arai

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# An Approach to Mobile App Design and Development Combining Design Thinking, User Experience, and Iterative-Incremental Development

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**Abstract.** Mobile applications have grown at an accelerated pace, closely following the technological development of mobile devices, however, on some occasions such applications do not meet customer expectations. Agile methodologies have been used in order to face the complexity in the development process, as well as cope with the changing environment and the fast delivery that the market demands. According to the literature, one of the recurring problems is that the developers do not actually consider the real needs of the users, therefore, efforts have been made to apply hybrid development models. This paper presents a methodology proposal that integrates design thinking, user experience and iterative-incremental software development with the aim of developing competitive products that offer an adequate user experience, contemplating the user as the main axis. The methodology involves 7 phases: empathize, define, analyze and ideate, design, prototype, evaluate and refine, which are described in detail. In addition, the article presents the results of the development of two mobile applications, the first addressed the stray dogs problem in a city, the second focuses on improving the communicative functionality of customers in a cafeteria, through the use of augmented reality. Both applications were verified through usability tests, they were also evaluated with respect to their initial requirements. The results of this research can help developers when considering a software creation alternative that improves the proposed solutions and is more user oriented.

**Keywords:** Mobile Applications · Design Thinking · User Experience

## 1 Introduction

Project development has been approached from different angles depending on each discipline, for example, projects are proposed under the research methodology in health sciences and in the chemical industry, among others. In the field of teaching, for example, there are methodologies such as Project-Based Learning (PBL), Flipped Classroom,