ABSTRACT BOOK

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7^{th} INTERNATIONAL CONFERENCE OF MATHEMATICAL SCIENCES ICMS 2023

5-9 JULY 2023

İSTANBUL, TÜRKİYE

Supported by

Edited by

Özkan Değer and Hüseyin Çakallı

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1. FOREWORD

On behalf of the Organizing Committee, we are very pleased to welcome you to the 7th International Conference of Mathematical Sciences (ICMS 2023) to be held between 5-9 JULY 2023 via face-to-face and online Conference supported by Maltepe University in Istanbul. We hope that, ICMS 2023 will be one of the most beneficial scientific events, bringing together mathematicians from all over the world, and demonstrating the vital role that mathematics plays in any field of science. Welcome to our conference at Maltepe University.

Hüseyin Çakallı
Chairman of the Organizing Committee

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Özkan Değer (Türkiye)
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Pratulananda Das (India)

3. SESSIONS

The lectures in the following parallel sessions are to be held after the plenary speakers lectures.

0. **"Plenary"** organized by Hüseyin Çakallı,
1. **"Topology"** organized by Ljubisa D.R. Kocinac and Osman Mucuk,
2. **"Analysis and Functional Analysis"** organized by Hacer Şengül Kandemir and Nazlım Deniz Aral,
3. **"Sequences, Series, Summability"** organized by İbrahim Çanak and Sefa Anıl Sezer,
4. **"Fixed Point Theory"** organized by Duran Türkoğlu and Hakan Şahin,
5. **"Numerical Functional Analysis"** organized by Allaberen Ashyralyev and Charyyar Ashyralyyev,
6. **"Computer Science and Technology"** organized by Şahin Uyaver and Önder Şahinaslan,
7. **"Mathematical Methods in Physics"** organized by Özay Gürtuğ and Filiz Çağatay Uçgun,
8. **"Applied Statistics"** organized by Müjgan Tez and Kadri Ulaş Akay,
9. **"Differential Geometry"** organized by Zerrin Şentürk,
10. **"Algebra"** organized by Leyla Bugay,
11. **"Fundamentals of Mathematics and Mathematical Logic"** organized by Tahsin Öner and İbrahim Şentürk.

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Serdar ANGÜN, Maltepe University, Istanbul, Türkiye,
Fikriye İnce Dağcı, Kültür University, Istanbul, Türkiye

Hüseyin Çakallı
Chairman of the Organizing Committee

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Evolution of Software Development Process from Past to Future: An Important Reflection of Digital Transformation

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Abstract

The software development process has undergone a great evolution from past to present. There is a rapid change from traditional software development methods to modern and innovative approaches. This change is an important reflection of digital transformation along with technological developments. Today, developments in many areas such as artificial intelligence, machine learning, automatic code generation, smart test automation, low code development lead the change in the software development process. In the future, it is predicted that the software development process will evolve into faster, more reliable, flexible and innovative methods with the impact of advanced technologies. This will affect all environments that produce, operate and use the software and will cause radical changes in usage. In this study, the change and current situation of the software development process from past to present will be discussed. Predictions will be shared on how and in what way digital transformation and technological advances may affect the process in the future.

Keywords: Software Development Process Evolution, Digital Transformation, Technology and Innovation
2020 Mathematics Subject Classification Numbers: 68-04, 68U35, 68P30, 97P50

References

[1] Thomas, D., & Hunt, A. (2019). The pragmatic programmer. Addison-Wesley Professional.

[2] Martin, R. C. (2003). Agile software development: principles, patterns, and practices. Prentice Hall PTR

[3] Sharifi, H., & Zhang, Z. (1999). A methodology for achieving agility in manufacturing organisations: An introduction. International journal of production economics, 62(1-2), 7-22.

[4] Sharma, S., Sarkar, D., & Gupta, D. (2012). Agile processes and methodologies: A conceptual study. International journal on computer science and Engineering, 4(5), 892.

[5] Alami, A., & Paasivaara, M. (2021). How do agile practitioners interpret and foster "technical excellence"?. In Evaluation and assessment in software engineering (pp. 10-19).

[6] Sahinaslan, E., Sahinaslan, O., Sabancıoglu, M. (2021). Low-code application platform in meeting increasing software demands quickly: SetXRM, AIP Conference Proceedings 2334, 070007. https://doi.org/10.1063/5.0042213

[7] Sahinaslan, E., Sahinaslan, O., Dijital Dönüşümde Öncelikli Alanlar ve İlgili Teknolojiler, Proceedings of the International Congress on Business and Marketing, 13-14.06.2019, ISBN 978-605-2124-27-7, Istanbul, Turkey (in Turkish).

[8] Sabacıoglu, M., Sahinaslan, O., Sahinaslan, E., New Generation Low Code Development Platform to Meet Increasing Software Demands: SetXRM, International Conference of Mathematical Sciences (ICMS 2020), 17-21 June, 2020, ISBN 978-605-2124-32-1, Maltepe University, Istanbul, Turkey

[9] Sahinaslan, E., "Endüstri 4.0 Dönüşümünde Öne Çıkan Teknolojiler" (Kitap Bölümü), Hayaloğlu,A. & Günday, A.(Ed), Mühendislik Alanında Akademik Çalışmalar, Gece Kitaplığı, ISBN: 978-625-7938-96-9, Ankara, 2020, s.235-252 (in Turkish).

[10] Kim, G., Humble, J., Debois, P., Willis, J., & Forsgren, N. (2021). The DevOps handbook: How to create world-class agility, reliability, & security in technology organizations. IT Revolution.

[11] Karamitsos, I., Albarhami, S., & Apostolopoulos, C. (2020). Applying DevOps practices of continuous automation for machine learning. Information, 11(7), 363.

[12] Lawal, A., & Ogbu, R. C. (2021). A comparative analysis of agile and waterfall software development methodologies. Bakolori Journal of General Studies, 11(2), 1-2.