# Guest Editorial:
# Special Issue from ISCA Fall--2021 SEDE Conference

This special issue of the International Journal of Computers and their Applications (IJCA) is a collection of four refereed papers selected from SEDE 2021: the 30th International Conference on Software Engineering on Data Engineering, held October 11-12, 2021. This conference, due to the pandemic, was held virtually.

Each paper submitted to the conference was reviewed by at least two members of the international program committee, as well as by additional reviewers, judging for originality, technical contribution, significance and quality of presentation. The proceedings for this conference can be found online at https://easychair.org/publications/volume/SEDE_2021. After the conference, the six best papers were recommended by the program committee members to be considered for publication in this special issue of IJCA. The authors were invited to submit a revised version of their papers. After extensive revisions and a second round of review, these papers were accepted for publication in this issue of the journal.

The papers in this special issue cover a broad range of research interests in the community of computers and their applications. The topics and main contributions of the papers are briefly summarized below.

ISLAM KHALIL, SHERIF EL-KASSAS, and KARIM SOBH of The American University in Cairo, Cairo, Egypt present their paper "A Multi-Modal, Pluggable Transaction Tamper Evident Database Architecture." In this paper they present the architecture for a multi-modal tamper detection solution with a primary goal of being easily retrofittable into existing systems with minimal intervention required from system developers or system administrators in large organization. Their focus in this work is append-only databases like financial transactions, auditing systems, as well as technical system logs. They also pay attention to data confidentiality and leverage designs like chains of record hashes to achieve the target solution. They illustrate different ways of integrating DBKnot into existing architecture, and then go through how to leverage existing web-service configuration and definition standards to increase the seamlessness and ease of retrofitting into existing applications by automatically detecting and learning about the target web-service semantics without much need for manual human intervention.

JONATHON HEWITT, DANIEL HALL, CHRISTOPHER PARKS, PAYTON KNOCH, SERGIU M. DASCALU, DEVRIN LEE, NIKKOLAS J. IRWIN, and FREDERICK C. HARRIS, JR. of the University of Nevada, Reno present their paper "Design and Implementation of VS-TAP: The Veteran Services Tracking and Analytics Program." In this work they present VS-TAP, the The Veteran Services Tracking and Analytics Program. VS-TAP is a data gathering and analytics application with the goal of collecting, storeing, and combineing data from several sources into a single usable database. The web application also tracks the rate and duration of visitors that attend veteran centers and events. The program combines all the data collected from various sources that can be queried for data visualization purposes.

FENG YU of Yougstown State Univeristy in Youngstown Ohio, SEMIH CAL of Texas Tech University inLubbock Texas, EN CHENG of the University of Akron in Akron Ohio, LUCY KERNS of Yougstown State Univeristy in Youngstown Ohio, and WEIDONG XIONG of Cleveland State University in Cleveland Ohio present their paper "Non-parametric Error Estimation for σ -AQP using Optimized Bootstrap Sampling." In this work, they employ a non-parametric statistical method, called bootstrap sampling, to assess errors of an Approximate Query Processing (or AQP) system for selections queries (or σ -AQP). They implement a prototype AQP system integrated with a bootstrap sampling engine that can estimate the standard deviation and produce confidence intervals for selection query estimations. Extensive experiments operating the prototype system demonstrated that the confidence intervals generated can cover the ground truth query results with high accuracy and low computing costs. In addition, thye introduce optimization strategies for bootstrap sampling which can improve the overall computing efficiency of the prototype AQP system.

LIN HALL, PING WANG, GRAYSON BLANKENSHIP, EMMANUEL ZENIL LOPEZ, CHRIS CASTRO, ZHEN ZHU, and RUI WU of East Carolina University present their work "VR Tracker Location and Rotation Predictions using HTC Vive Tracking System and Gradient Boosting Regressor." They proposed a framework which integrates VR with machine learning to track, predict and visualize the position and orientation of VR trackers. The framework includes prediction of time series data obtained from the simulated human spine, for which they use a gradient boosting regressor model. The simulated human spine is visualized in VR. They propose ther framework can support other medical visualization applications as well.

As guest editors, we would like to express our deepest appreciation to the authors and the program committee members of the conference these papers were selected from.

We hope you will enjoy this special issue of the IJCA and we look forward to seeing you at a future ISCA conference. More information about ISCA society can be found at http://www.isca-hq.org.

Guest Editors:

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