

### **Tailored gamification: A review of literature**

Klock, A. C. T., Gasparini, I., Pimenta, M. S. & Hamari, J., 1 Dec 2020, In : International Journal of Human Computer Studies. 144, 102495.

Research output: Contribution to journal › Review Article › Scientific › peer-review

### **The effect of challenge-based gamification on learning: An experiment in the context of statistics education**

Legaki, N. Z., Xi, N., Hamari, J., Karpouzis, K. & Assimakopoulos, V., 1 Dec 2020, In : International Journal of Human Computer Studies. 144, 102496.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Some SonarQube issues have a significant but small effect on faults and changes. A large-scale empirical study**

Lenarduzzi, V., Saarimäki, N. & Taibi, D., Dec 2020, In : Journal of Systems and Software. 170, 15 p., 110750.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Necessary and sufficient conditions for the existence of solution of generalized fuzzy relation equations $A \Leftrightarrow X = B$**

Turunen, E., 1 Oct 2020, In : Information Sciences. 536, p. 351-357 7 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Using Deep Learning for price prediction by exploiting stationary limit order book features**

Tsantekidis, A., Passalis, N., Tefas, A., Kannianen, J., Gabbouj, M. & Iosifidis, A., 1 Aug 2020, In : Applied Soft Computing Journal. 93, 106401.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Flow-bounded trajectory-scaling algorithm for hydraulic robotic manipulators**

Lampinen, S., Niemi, J. & Mattila, J., 1 Jul 2020, *2020 IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM 2020*. IEEE, p. 619-624 6 p. (IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **On the zeros of the partial Hosoya polynomial of graphs**

Ghorbani, M., Dehmer, M., Cao, S., Feng, L., Tao, J. & Emmert-Streib, F., 1 Jul 2020, In : Information Sciences. 524, p. 199-215 17 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Kvazaar 2.0: Fast and efficient open-source HEVC inter encoder**

Lemmetti, A., Viitanen, M., Mercat, A. & Vanne, J., 27 May 2020, *MMSys 2020 - Proceedings of the 2020 Multimedia Systems Conference*. ACM, p. 237-242 6 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Adaptive Normalization for Forecasting Limit Order Book Data Using Convolutional Neural Networks**

Passalis, N., Tefas, A., Kannianen, J., Gabbouj, M. & Iosifidis, A., 1 May 2020, *2020 IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2020 - Proceedings*. IEEE, p. 1713-1717 5 p. (ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings; vol. 2020-May).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Peer to Peer Offloading with Delayed Feedback: An Adversary Bandit Approach**

Yang, M., Zhu, H., Wang, H., Koucheryavy, Y., Samouylov, K. & Qian, H., 1 May 2020, *2020 IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2020 - Proceedings*. IEEE, p. 5035-5039 5 p. (ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing - Proceedings; vol. 2020-May).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **SeCon-NG: Implementing a lightweight cryptographic library based on ECDH and ECDSA for the development of secure and privacy-preserving protocols in contiki-NG**

Frimpong, E. & Michalas, A., 30 Mar 2020, *35th Annual ACM Symposium on Applied Computing, SAC 2020*. ACM, p. 767-769 3 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Gaussian mixture models for signal mapping and positioning**

Raitoharju, M., García-Fernández, F., Hostettler, R., Piché, R. & Särkkä, S., 1 Mar 2020, In : *Signal Processing*. 168, 107330.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Serverless: What it Is, What to Do and What Not to Do**

Nupponen, J. & Taibi, D., 1 Mar 2020, *2020 IEEE International Conference on Software Architecture Companion, ICSA-C 2020*. IEEE, p. 49-50 2 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A custom processor for protocol-independent packet parsing**

Zolfaghari, H., Rossi, D. & Nurmi, J., 1 Feb 2020, In : *Microprocessors and Microsystems*. 72, 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Are SonarQube Rules Inducing Bugs?**

Lenarduzzi, V., Lomio, F., Huttunen, H. & Taibi, D., 1 Feb 2020, *SANER 2020 - Proceedings of the 2020 IEEE 27th International Conference on Software Analysis, Evolution, and Reengineering*. Kontogiannis, K., Khomh, F., Chatzigeorgiou, A., Fokaefs, M-E. & Zhou, M. (eds.). IEEE, p. 501-511 11 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **A preliminary network analysis on steam game tags: Another way of understanding game genres**

Li, X. & Zhang, B., 29 Jan 2020, *AcademicMindtrek 2020 - Proceedings of the 23rd International Academic Mindtrek Conference: January 29-30, 2020, Tampere, Finland*. ACM, p. 65-73 9 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Color game: A collaborative social robotic game for icebreaking; Towards the design of robotic ambiances as part of smart building services**

Beheshtian, N., Kaipainen, K., Kähkönen, K. & Ahtinen, A., 29 Jan 2020, *AcademicMindtrek 2020 - Proceedings of the 23rd International Academic Mindtrek Conference: January 2020, Tampere*. ACM, p. 10-19 10 p.

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### **Demographic differences in accumulated types of capital in massively multiplayer online role-playing games**

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Innovation challenges as a novel multidisciplinary learning platform**

Jokiniemi, S., Myllärniemi, J., Poranen, T. & Vuorenmaa, M., 29 Jan 2020, *AcademicMindtrek 2020 - Proceedings of the 23rd International Academic Mindtrek Conference: January 2020, Tampere*. ACM, p. 145-148 4 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Satisfaction and willingness to consume immersive journalism: Experiment of differences between VR, 360 video, and article**

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Social human-robot interaction in the wild: A workshop proposal for academic mindtrek 2020**

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific

### **"The superhero of the university": Experience-driven design and field study of the university guidance robot**

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### **Anthropometric clothing measurements from 3D body scans**

Yan, S., Wirta, J. & Kämäräinen, J.-K., 2020, In : Machine Vision and Applications. 31, 1-2, 11 p., 7.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Sensor-Based Cooperative Multi-Antenna Spectrum Sensing with Imperfect Reporting Channels**

Li, M., Alhussein, O., Sofotasios, P. C., Muhaidat, S., Yoo, P. D., Liang, J. & Wang, A., 2020, In : IEEE Transactions on Sustainable Computing. 5, 1, p. 48-60 13 p.

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### **Compressive sensed video recovery via iterative thresholding with random transforms**

Belyaev, E., Codreanu, M., Juntti, M. & Egiazarian, K., 2020, In : IET Image Processing. 14, 6, p. 1187-1200 14 p.

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Research output: Contribution to journal › Article › Scientific › peer-review

### **Does migrating a monolithic system to microservices decrease the technical debt?**

Lenarduzzi, V., Lomio, F., Saarimäki, N. & Taibi, D., 2020, In : Journal of Systems and Software. 169, 16 p., 110710.

Research output: Contribution to journal › Review Article › Scientific › peer-review

### **Exploration and exploitation of sensorimotor contingencies for a cognitive embodied agent**

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### **FinnForest dataset: A forest landscape for visual SLAM**

Ali, I., Durmush, A., Suominen, O., Yli-Hietanen, J., Peltonen, S., Collin, J. & Gotchev, A., 2020, In : ROBOTICS AND AUTONOMOUS SYSTEMS. 132, 13 p., 103610.

Research output: Contribution to journal › Article › Scientific › peer-review

### **IoT-CryptoDiet: Implementing a lightweight cryptographic library based on ecdh and ecdsa for the development of secure and privacy-preserving protocols in contiki-ng**

Frimpong, E. & Michalas, A., 2020, *IoTBDSD 2020 - Proceedings of the 5th International Conference on Internet of Things, Big Data and Security*. Wills, G., Kacsuk, P. & Chang, V. (eds.). SCITEPRESS, p. 101-111 11 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **On the diffuseness of technical debt items and accuracy of remediation time when using SonarQube**

Baldassarre, M. T., Lenarduzzi, V., Romano, S. & Saarimäki, N., 2020, In : Information and Software Technology. 128, 18 p., 106377.

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### **Patterns for serverless functions (Function-as-a-Service): A multivocal literature review**

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### **Redundancy-based visual tool center point pose estimation for long-reach manipulators**

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### **Shearlet Transform-Based Light Field Compression under Low Bitrates**

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### **User experience of stereo and spatial audio in 360° live music videos**

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### **Validating effectiveness of safety requirements' compliance evaluation in process assessments**

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### **Bayesian receiver operating characteristic metric for linear classifiers**

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### **Software architecture design in global software development: An empirical study**

Sievi-Korte, O., Richardson, I. & Beecham, S., 1 Dec 2019, In : Journal of Systems and Software. 158, 110400.

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### **Promoting local culture and enriching airport experiences through interactive storytelling**

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Programming languages for data-intensive HPC applications: A systematic mapping study**

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Research output: Contribution to journal › Article › Scientific › peer-review

### **Action-Oriented Programming Model: Collective Executions and Interactions in the Fog**

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### **Feasibility of FPGA accelerated IPsec on cloud**

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### **An icon that everyone wants to click: How perceived aesthetic qualities predict app icon successfulness**

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### **Automatic word count estimation from daylong child-centered recordings in various language environments using language-independent syllabification of speech**

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### **DevOps in practice: A multiple case study of five companies**

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### **The Double Shadowed $\kappa$ - $\mu$ Fading Model**

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### **Tunable VVC Frame Partitioning based on Lightweight Machine Learning**

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### **Model checking and validity in propositional and modal inclusion logics**

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### **Performance analysis of single-query 6-DoF camera pose estimation in self-driving setups**

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### **Game postmortems vs. developer Reddit AMAs: Computational analysis of developer communication**

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### **Social features in hybrid board game marketing material**

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### **Are architectural smells independent from code smells? An empirical study**

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### **Enabling cybersecurity incident reporting and coordinated handling for maritime sector**

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### **Hermitian normalized Laplacian matrix for directed networks**

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### **Real-time online drilling vibration analysis using data mining**

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### High-performance SIMD implementation of the lattice-Boltzmann method on the Xeon Phi processor

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### Detection of Typical Pronunciation Errors in Non-native English Speech Using Convolutional Recurrent Neural Networks

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### User Experience Study of 360° Music Videos on Computer Monitor and Virtual Reality Goggles

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### Public and open HEVC encoding service in the cloud

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### Investigation of egocentric social structures for diversity-enhancing followee recommendations

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### Facilitating the first move: Exploring inspirational design patterns for aiding initiation of social encounters

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### Towards Efficient Code Generation for Exposed Datapath Architectures

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### Deep Reinforcement Learning for Financial Trading Using Price Trailing

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#### **Low-latency Deep Clustering for Speech Separation**

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#### **Random Forest Oriented Fast QTBT Frame Partitioning**

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#### **Time Difference of Arrival Estimation of Speech Signals Using Deep Neural Networks with Integrated Time-frequency Masking**

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#### **Variance Preserving Initialization for Training Deep Neuromorphic Photonic Networks with Sinusoidal Activations**

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

#### **The FitOptiVis ECSEL Project: Highly Efficient Distributed Embedded Image/Video Processing in Cyber-Physical Systems Invited Paper**

Al-Ars, Z., Basten, T., Beer, A., Geilen, M., Goswami, D., Jääskeläinen, P., Kadlec, J., Alejandro, M. M., Palumbo, F., Peeren, G., Pomante, L., Linden, F. V., Saarinen, J., Sääntti, T., Sau, C. & Zedda, M. K., 30 Apr 2019, *ACM International Conference on Computing Frontiers 2019, CF 2019 - Proceedings*. ACM, p. 333-338 6 p.

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#### **How do academics experience use of recorded audio feedback in higher education? A thematic analysis**

Heimbirger, A., Isomottonen, V., Nieminen, P. & Keto, H., 4 Mar 2019, *Frontiers in Education: Fostering Innovation Through Diversity, FIE 2018 - Conference Proceedings*. IEEE, 8658635. (Proceedings - Frontiers in Education Conference).

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#### **Challenges of Multi-Factor Authentication for Securing Advanced IoT Applications**

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#### **Analysis of an efficient parallel implementation of active-set Newton algorithm**

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