Tomas Cerny

Associate Professor (tenured), Software Engineering Unit, University of Arizona,
Systems and Industrial Engineering, 1127 E James E Rogers Way #122, Tucson, AZ, US, 85721
tom.cerny@gmail.com | (+1) 254.218.0436 | tcerny@arizona.edu
Personal web:// tomas-cerny.github.io | LinkedIn.com/in/tomascerny
ResearchGate.net/profile/Tom-Cerny | GoogleScholar:// user=iBX2zM4AAAAJ

PROFESSIONAL PREPARATION

CZECH TECH. UNIVERSITY	Prague, CZ	Computer Science & Engineering	Doctor of Philosophy | 2016
BAYLOR UNIVERSITY	Waco, TX	Computer Science	Master of Science | 2009
CZECH TECH. UNIVERSITY	Prague, CZ	Computer Science & Engineering	Master of Science | 2009
CZECH TECH. UNIVERSITY	Prague, CZ	Computer Science & Engineering	Bachelor | 2006

UNIVERSITY APPOINTMENTS

UNIVERSITY OF ARIZONA	Tucson, AZ	Associate Professor (tenured) | Aug 2023 –	now
BAYLOR UNIVERSITY	Waco, TX	Assistant/Associate Professor (tenured) | Aug 2017 –	Jul 2023
BAYLOR UNIVERSITY	Waco, TX	PostDoc | Feb 2017 –	Aug 2017
CZECH TECHNICAL UNIVERSITY	Prague, CZ	Assistant Professor | Sep 2009 –	Feb 2017
CHARLES UNIVERSITY	Prague, CZ	External Lecturer | Sep 2009 –	Mar 2010

OTHER APPOINTMENTS

INTL. COLLEGIATE PROGRAMMING CONTEST		Global Infrastructure Services Director | Mar 2024 –	now
INTL. COLLEGIATE PROGRAMMING CONTEST		Lead Developer | Dec 2006 –	Feb 2024
CODINGCRAYONS S.R.O., CZ	Melnik, CZ	Chief Executive Officer | May 2012 –	Mar 2017
AQUASOFT S.R.O., CZ	Prague, CZ	Technology Consultant / Architect | Feb 2011 –	Jul 2011
GOPAS A.S., CZ, SK	Prague, CZ	Consultant / Lecturer | Sep 2009 –	Feb 2017
DATAAPEX S.R.O., CZ	Prague, CZ	Lead Tester | Jan 2006 –	Dec 2006
CERTICON A.S., CZ	Prague, CZ	Tester | May 2005 –	Dec 2005

GRANT AWARDS

2025-27	**ICPC Foundation (pending UoA acceptance):** ICPC Global Infrastructure Services Lab	PI	(495k USD)
2025	**NSF I-Corps-2520782:** I-Corps: Translation potential of a just-in-time change impact analysis of microservice-based systems	PI	(50k USD)
2023-26	**NSF OISE-2245287 / 2409933:** IRES Track I: US-Finnish research on sustainable evolution and technical debt management in cloud-native systems	PI	(300k USD)
2022-24	**NSF CNS-2210091:** EAGER: DCL: SaTC: Enabling Interdisciplinary Collaboration: Using NLP to Identify Suspicious Transactions in Omnichannel Online C2C Marketplaces	Co-PI	(330k USD)
2019-23	**NSF OISE-1854049:** IRES Track I: U.S.-Czech Student Research Experience on Software Test Automation and Quality Assurance & Quality Assurance	PI	(288k USD)
2022-23	**NSF CNS-2136961:** IUCRC Planning Grant Baylor University: Center for Standards and Ethics in Artificial Intelligence (CSEAI)	Co-PI	(20k USD)
2020-21	**CDC/SBIR-75D30120C08537:** Healthy Behaviors through Active Design: An Evidence-based Web Application to Inform Environmental Design & Public Policy	Co-I	(340k USD)
2020-22	**ACM:** Symposium on Applied Computing'20-22 Online infrastructure	PI	(11k USD)
2016-20	**TACR-TH02010296** Quality Assurance System for the Internet of Things Technology	Co-PI	(450k USD)
2015-16	**CTU:** Development and Quality Assurance of Java Middleware	PI	(34k USD)
2013-17	**Avast Foundation:** Talented Students Grant for Upsilon Pi Epsilon	PI	(31k USD)

Recognition

PUBLICATION RECOGNITION

- Publication Detecting Hallucinations in Large Language Model Generation: A Token Probability Approach [23] at International Conference on Artificial Intelligence at **CSCE 2024** received the **best paper award**.
- Publication ChatGPT for Microservice Development: How far can we go? [41] received the **best paper award** at **Microservices 2023** by the cloud computing community
- Publication on system decomposition to microservices [75] received the **best paper award** at **IEEE SOSE 2022** from the service-oriented system engineering community (students involved)
- Publication software legal document analysis [67] received the **2nd best paper award** at **LatinX NLP Workshop 2022** from the natural-language processing community (students involved)
- Publication on clone matching in microservices [76] received the **best industrial paper award** at **CLOSER 2022** by the cloud computing community (students involved)
- Publication on microservice static analysis [68] received the **best tool** and the **best presentation award** at **Microservices 2022** by the cloud computing community

Figure 1: UPE induction '24

Figure 2: ICPC EUC'24 host

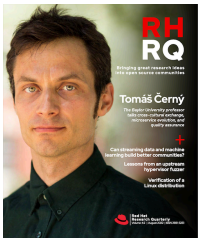

Figure 3: Red Hat RQ'22

EXTERNAL RECOGNITION

- ICPC Challenge Championship 2024 Goddess Maia Medal, Professional Problem Advisor
- The **most cited/downloaded** paper [111] at the ACM Applied Computing Review
- Finalist of **Postgrad Awards 2024** in the category of Masters Teacher of the Year
- Opening UPE chapter at the University of Arizona 2024 (Fig 1)
- Host of the opening/closing ceremony of the ICPC European Championship (Fig 2) `https://www.youtube.com/live/yMTGgVJ8Tf4?t=724s`
- Invited speech at Red Hat Research Day 2022 in Brno
- Two invited talks at Red Hat Research Interest Group 2021/22
- Keynote speech with students at Open Source Conference DevConf.cz 2021
- Featured on the front page of the Red Hat Research Quarterly in 2022 (Fig 3).
- ACM SIGAPP Outstanding Service Awards 2018 and 2015.
- Waco TV appearance: `https://www.kwtx.com/2022/10/20/baylor-professors-use-ai-identify-online-listings-that-lead-criminal-activity/`
- The 2011 Joseph S. DeBlasi Outstanding Contribution Award from The ACM International Collegiate Programming Contest.

INTERNAL RECOGNITION

- 2024: Arizona SIE Nomination for Craig M. Berge Fellowship
- 2023: Awarded **Baylor Outstanding Faculty Scholarship Award**
- 2021-2022: Baylor ECS Nomination for Baylor Outstanding Faculty Scholarship Award
- 2020-2021: Baylor CS Department Nomination for Baylor Outstanding Faculty Teaching (tenure-track)
- 2017-2019: Baylor Rising Star

INVITED LECTURES

- 2023 University of Melbourne, AU
- 2023 Deakin University, AU
- 2023 Western University, CA
- 2023 Singapore Institute of Technology, SG
- 2023 University of Southern Denmark, SG
- 2022 Brno University of Technology, CZ
- 2022 Red Hat Research Day Europe 2022, CZ
- 2021 DevConf.cz, CZ

PROVISIONAL PATENTS FILED

- 2024 UA24-122 63/560,590 044974.8122.US01
- 2024 UA24-121 63/564.248 044974.8121.US01
- 2025 UA25-118 63/744,169 044974.8146.US00
- 2024 UA24-061 63/612,462 044974.8115.WO00
- 2024 UA24-059 63/620,503 044974.8116.WO00
- 2025 UA25-035 63/711,601 044974.8140.US00

Service and Supervision

Since 2024, Cerny has served as the Faculty Representative of the South Arizona Upsilon Pi Epsilon Chapter (international honor society in the Computing and Information disciplines). [https://upe.acm.org]
Since 2023, Cerny has served as the ICPC Challenge Director (International Collegiate Programming Contest). [https://codeforces.com/icpc2023]

Member of the organizing committee of 2026 events:

- Conference Chair: (**ISD 2026**) Information Systems Development (Tucson, Arizona, 2026)

Member of the organizing committee of 2025 events:

- Conference Chair: (**CISOSE 2025**) IEEE International Congress on Intelligent and Service-Oriented Systems Engineering (Tucson, Arizona, 2025)
- Program Co-Chair: (**ESOCC 2025**) European Conference on Service-Oriented and Cloud Computing (Bolzano, Italy, 2025)

Member of the organizing committee of 2024 events:

- Journal First Co-Chair: (**SANER 2024**) The IEEE International Conference on Software Analysis, Evolution and Reengineering (Rovaniemi, Finland, March 12 - 15, 2024)
- Track Co-Chair: (**ISD 2024**) 32st International Conference on Information Systems Development (Gdansk, Poland, September 26 – 28, 2024)
- Opening and Closing Ceremony Host (**ICPC EUC 2024**) The 2024 ICPC Europe Championship (Prague, Czechia, March 22 - 24, 2024)
- Program Co-Chair: (**IEEE SOSE 2024**) The 18th IEEE International Conference on Service-Oriented System Engineering (Shanghai, China, July 15-18, 2024)

Member of the organizing committee of 2023 events / Editor:

- Program Co-Chair: **(Microservices 2023)** The International Conference on Microservices 2023 (Pisa, Italy, October 10 - 12, 2023)
- Program Co-Chair: (**IEEE SOSE 2023**) The 17th IEEE International Conference on Service-Oriented System Engineering (Athens, Greece, July 17-20, 2023)
- Program Co-Chair: (**ACM SAC 2023**) The 38th ACM/SIGAPP Symposium On Applied Computing (Tallinn, Estonia March 27 - 31, 2023)
- Special Issue Editor at **Cluster Computing** journal: *Advancements in Service-Oriented Software*
- Special Issue Editor at **Neural Computing and Applications** journal: *From Theory to Practice: Real-World Applications of AI in Data Science*

Member of the organizing committee of 2022 events:

- ICPC Global Services: (**ICPC WF2022**) The 38th World Finals of the International Collegiate Programming Contest (Dhaka, Bangladesh, Nov 6 - 11, 2022)
- Program Co-Chair: (**ACM SAC 2022**) The 37th ACM/SIGAPP Symposium On Applied Computing (Virtual conference April 25 - 29, 2022)
- Program Co-Chair: (**ACM RACS 2022**) The 2022 International Conference on Research in Adaptive and Convergent Systems (Virtual conference October 3 - 6, 2022)

RECENT POSTDOCTORAL FELLOWS

- Xiazhou Li (Tampere University) - Internship supervision at Baylor
- Gissella Bejarano Nicho - Accepted a position at Marist College, NY
- Jun Huang - Continues research
- Dongwan Shin - Continues at NMT, NM
- Byungkwan Jung - Accepted a position at Troy University, AL

SUPERVISED DOCTORAL STUDENTS

- Ernesto Quevendo Caballero (2024), Leveraging Large Language Models for Legal Document Understanding and Software System Analysis: Addressing Key Challenges (9 publications; 29 citations)
- Amr S. Abdelfattah (2024), Fostering Microservice Maintainability Assurance through a Comprehensive Support Framework (AKA Amr ElSayed) (19 publications; 325 citations)
- Michal Trnka (2021), Context-aware security of Internet of Things applications (16 publications; 549 citations)
- Karel Cemus (2019), Aspect-driven Development of Enterprise Information Systems (17 publication; 131 citations)

Supervised Student Profiles

I am delighted to supervise and mentor students in research.
Selected list of my student accomplishments:

SELECTED SUPERVISED STUDENT RECOGNITION AND AWARDS

- 2024: Caballero, Yero, Koerner received Best Paper Award CSCE 2024
- 2023: Boyle brothers and Adams received Best Paper Award Microservices 2023
- 2023:Amr S. Abdelfattah: Baylor Student Staff Award
- 2023: Ernesto Quevedo: Graduate Assistant Award
- 2023: Mia Gortney: Undergraduate Research Award
- 2022: Maharjan, Sooksatra, Caballero, Rahman, Svacina, Bushong, and Das (supervised Baylor graduates) received Best Paper Awards at international conferences (SOSE, CLOSER, LXNLP)
- 2022: Jacob Curtis & Amr ElSayed placed 2^{nd} & 5^{nd} at Student Research Competition at the ACM SAC'22
- 2022: Ernesto Caballero & Micah Schiewe earned 3^{nd} places at Baylor Scholar's Day (grad/ugrd categories)
- 2022: Ernesto Caballero UPE Academic Achievement Awards (graduate research):
- 2022: Mia Gortney UPE Executive Council Awards (undergraduate research):
- 2022: Pat Harris and Mia Gortney featured at RHRQ (undergraduate research):
  https://research.redhat.com/blog/article/students-thrive-in-open-source-research-opportunities
- 2021: Micah Schiewe earned UPE/ACM Student Chapter Scholarship Award
- 2021: Thanvi Dhanenkula (K12) received the Aspirations in Computing Award
  - National Center for Women & Information Technology (NCWIT)
- 2019: Andrew Walker earned UPE Academic Achievement Award
- 2018: Antonin Smid earned UPE Scholarship Award - Academic Achievement Award
- 2017: Barbora Suchanova wins Microsoft's Imagine Cup
- 2017: Michal Trnka receives Fulbright Scholarship to perform research at Baylor University
- 2014: Lubos Matl earns One of the Best Poster Award : Effective Manycast Messaging for Overlay Networks (SofSem)
- 2011: Ondrej Mirtes and Petr Praus earned 2^{nd} and 3^{rd} place at Thesis of the year in the Czech Republic

RECENT STUDENT RESEARCH PROFILES

- Andrew Walker, Bachelor's, 2019-21 (Software Engineer at South West Airlines)
  - 11 publications / 236 citations
  - https://scholar.google.com/scholar?q=author:%22Walker%22+author:%22Cerny%22+%22Baylor%22
- Micah Schiewe, Bachelor's, 2020-22 (Software Engineer at Ascension)
  - 4 publications / 56 citations
  - https://scholar.google.com/scholar?q=author%3A%22Schiewe%22+author%3A%22Cerny%22+%22Baylor%22
- Jacob Curtis, Bachelor's, 2020-22 (Systems Engineer at Cloudflare)
  - 4 publications / 49 citations
  - https://scholar.google.com/scholar?q=author%3A%22Curtis%22+author%3A%22Cerny%22+%22Baylor%22
- Dipta Das, Master's, 2019-21 (Software Development Engineer)
  - 15 publications / 232 citations
  - https://scholar.google.com/citations?user=WhgwUY8AAAAJ
- Abdullah Al Maruf, Master's, 2020-22 (currently graduated)
  - 12 publications / 267 citations
  - https://scholar.google.com/citations?user=Prun7T8AAAAJ
- Vincent Bushong, Master's, 2019-21
  - 14 publications / 208 citations
  - https://scholar.google.com/scholar?q=author:%22Bushong%22+author:%22Cerny%22+%22Baylor%22
- Jan Svacina, Master's, 2018-20
  - 12 publications / 156 citations
  - https://scholar.google.com/scholar?q=author:%22Svacina%22+author:%22Cerny%22+%22Baylor%22
- Amr Elsayed S. Abdelfattah Aisha, **Ph.D.**, 2021-now
  - 19 publications / 325 citations
  - https://scholar.google.com/citations?user=hszZV4YAAAAJ
- Michal Trnka, **Ph.D.**, 2016-2022 (Senior consultant in GraphAware)
  - 16 publications and 549 citations
  - https://scholar.google.com/citations?user=3UPapfMAAAAJ

CITATIONS (H-INDEX: 26)

One measure to assess scientific impact is the number of citations. Given the number of publications and citation counts with daily updates, complete details are available at the indexers below, with a snapshot given in Table 1. Selected journal publication stat is given in Table 2.

- Google Scholar **scholar.google.com/citations?user=iBX2zM4AAAAJ**
- ResearchGate **researchgate.net/profile/Tom_Cerny**

Table 1. Citations per year. Source Google Scholar. Result of 02/2025 (* incl. accepted - waiting for publication)

	..	2018	2019	2020	2021	2022	2023	2024	2025	Total
Peer-reviewed publications	..	13	7	12	15	22	27	20	5	184
Citations per year (Google Scholar)	..	100	148	198	213	332	531	596	115	2635

Table 2. Selected Journals

Publisher	Journal/Book	Impact Factor	Quartile	Count
IEEE	Access	3.9	Q1	8x
Springer	Cluster Computing	3.6	Q1	6x
ACM	Applied Computing Review	-	-	6x
MDPI	Applied Sciences	2.5	Q3	4x
Elsevier	Journal of Systems and Software	3.7	Q1	3x
MDPI	Sensors	3.4	Q2	3x
MDPI	Electronics	2.6	Q2	3x
IEEE	Transactions on Industrial Informatics	12.3	Q1	2x
Springer Nature	Computer Science	-	Q2	2x
Taylor & Francis	Enterprise Information Systems	4.4	Q1	1x
PeerJ	Computer Science	3.8	Q1	1x
Springer	Journal on Multimodal User Interfaces	2.2	Q2	1x

PUBLICATIONS (*ALL PEER–REVIEWED/REFEREED*)

The below publications are grouped by **years**, and **type**. All listed publications were **peer-reviewed**. If available, the given periodical is annotated with **Impact Factor** and **Quartile** relevant to the particular journal field(s) (Q1 is the highest). If available, the **acceptance rate** is given for articles. References default to **full-papers** publication unless specified otherwise. **Highlighted works** give details on major research direction, impact, and contribution. Provided **citations**, follow the Google Scholar statistics.

2025

Journals

[1] Amr S Abdelfattah, Tomas Cerny, Md Showkat Hossain Chy, Md Arfan Uddin, Samantha Perry, Cameron Brown, Lauren Goodrich, Miguel Hurtado, Muhid Hassan, Yuanfang Cai et al. 'Multivocal study on microservice dependencies'. In: ***Journal of Systems and Software*** (2025), p. 112334.

Conferences

[2] Amr S Abdelfattah, Kari E Cordes, Austin Medina and Tomas Cerny. 'Semantic Dependency in Microservice Architecture: A Framework for Definition and Detection'. In: ***22nd International Conference on Systems and Software Reuse (ICSR at ICSE 2025)***. 2025.

Annotation: *Accepted.*

[3] Amr S Abdelfattah, Jorge Yero and Tomas Cerny. ' MicroAnalyzer.NET: Deriving Microservice Architectural Perspectives Using Static Code Analysis For C# Platform'. In: ***The 2nd International Workshop New Trends in Software Architecture (SATrends2025 at ICSE 2025)***. 2025.

Annotation: *Accepted.*

[4] Tomas Cerny, Gabriel Goulis and Amr S Abdelfattah. 'Towards Change Impact Analysis in Microservices-based System Evolution'. In: ***2025 IEEE 32nd International Conference on Software Analysis, Evolution and Reengineering (SANER)***. 2025.

Annotation: *Accepted*.

[5] Xiaozhou Li, Noman Ahmad, Tomas Cerny, Andrea Janes, Valentina Lenarduzzi and Davide Taibi. 'Toward Organizational Decoupling in Microservices Through Key Developer Allocation'. In: ***International Conference on Software Architecture (ICSA 2025)***. 2025.

Annotation: *Accepted*.

2024

Journals

[6] Amr S Abdelfattah, Tomas Cerny, Jorge Yero, Eunjee Song and Davide Taibi. 'Test Coverage in Microservice Systems: An Automated Approach to E2E and API Test Coverage Metrics'. In: ***Electronics*** 13.10 (2024), p. 1913.

Impact Factor: *2.9, Quartile: Q2 (Computer Networks and Communications)*.

[7] Amr S. Abdelfattah, Tomas Cerny, Jorge Yero Salazar, Xiaozhou Li, Davide Taibi and Eunjee Song. 'Assessing Evolution of Microservices Using Static Analysis'. In: ***Applied Sciences*** 14.22 (2024).

[8] Tomas Cerny, Amr S Abdelfattah, Jorge Yero and Davide Taibi. 'From static code analysis to visual models of microservice architecture'. In: ***Cluster Computing*** (2024), pp. 1–26.

Impact Factor: *3.6, Quartile: Q1 (Software)*.

[9] Md.Showkat Chy, Korn Sooksatra, Jorge Yero and Tomas Cerny. 'Benchmarking Micro2Micro transformation: an approach with GNN and VAE'. In: ***Cluster Computing*** (2024).

Impact Factor: *3.6, Quartile: Q1 (Software)*.

[10] Agata Kruzikova, Alessia Michela Di Campi, Vashek Matyas and Tomas Cerny. 'No Thumbs Up in Pictures! Fingerprint Forgery for the Masses...' In: ***IEEE Access*** (2024), pp. 1–1. doi: 10.1109/ACCESS.2024.3446034.

Impact Factor: *3.9, Quartile: Q1 (Computer Science)*.

[11] Luka Lelovic, Austin Huzinga, Gabriel Goulis, Anshpreet Kaur, Ricardo Boone, Umidjon Muzrapov, Amr S. Abdelfattah and Tomas Cerny. 'Change impact analysis in microservice systems: A systematic literature review'. In: ***Journal of Systems and Software*** 219 (2024), p. 112241. doi: https://doi.org/10.1016/j.jss.2024.112241. url: https://www.sciencedirect.com/science/article/pii/S0164121224002851.

[12] Ernesto Quevedo, Amr S Abdelfattah, Rodriguezm Alejandro, Jorge Yero and Tomas Cerny. 'Evaluating ChatGPT's Proficiency in Understanding and Answering Microservice Architecture Queries Using Source Code Insights'. In: ***SN COMPUT. SCI.*** 5.4 (2024), p. 422.

Conferences

[13] Lauren Adams, Amr S. Abdelfattah, Md Showkat Hossain Chy, Samantha Perry, Patrick Harris, Tomas Cerny, Dario Amoroso d'Aragona and Davide Taibi. 'Evolution and Anti-patterns Visualized: MicroProspect in Microservice Architecture'. In: ***Software Architecture. ECSA 2023 Tracks, Workshops, and Doctoral Symposium***. Springer. 2024, pp. 309–325.

[14] Tomas Cerny, Amr S Abdelfattah, Darek Gajewski, Patrick Harris and Mia Gortney. 'Is the 3D model the way to go when presenting microservice architecture?' In: ***Proceedings of the 39th IEEE/ACM International Conference on Automated Software Engineering Workshops***. 2024, pp. 223–227.

[15] Tomas Cerny, Md Showkat Hossain Chy, Amr Abdelfattah, Jacopo Soldani and Justus Bogner. 'On Maintainability and Microservice Dependencies: How Do Changes Propagate?' In: ***In Proceedings of the 14th International Conference on Cloud Computing and Services Science***. INSTICC. SciTePress, 2024, pp. 277–286.

Annotation: *Short Paper*.
Acceptance Rate: *33%*.

[16] Tomas Cerny, Md Showkat Hossain Chy, Muhmmad Ashfakur Rahman Arju, Korn Sooksatra, Amr S. Abdelfattah and Valentina Lenarduzzi. 'A Multi-variant Benchmark for Microservice Systems in Software Engineering Research'. In: ***Software Architecture. ECSA 2024***. Springer. 2024.

[17] Amoroso Dario d'Aragona, Alexander Bakhtin, Xiaozhou Li, Ruoyu Su, Lauren Adams, Ernesto Aponte, Francis Boyle, Patrick Boyle, Rachel Koerner, Joseph Lee, Fangchao Tian, Yuqing Wang, Jesse Nyyssola, Ernesto Quevedo, Md Shahidur Rahaman, S. Amr Abdelfattah, Mika Mantyla, Tomas Cerny and Davide Taibi. 'A Dataset of Microservices-based Open-Source Projects'. In: ***2024 IEEE/ACM 21st International Conference on Mining Software Repositories (MSR)***. 2024, pp. 215–219.

[18] Darek Gajewski, Muhmmad Ashfakur Rahman Arju, Amr S. Abdelfattah and Tomas Cerny. 'Case Study: Applying automated optimization tooling to microservice environments that scale safely at Ancestry.com and the Learnings'. In: ***Software Architecture. ECSA 2024***. Springer. 2024.

[19] Tomas Holek, Miroslav Bures and Tomas Cerny. 'Review of Open Software Bug Datasets'. In: ***World Conference on Information Systems and Technologies***. Springer, Cham. 2024, pp. 3–12.

[20] Austin Huizinga, Garrett Parker, Amr S Abdelfattah, Xiaozhou Li, Tomas Cerny and Davide Taibi. 'Detecting Microservice Anti-patterns Using Interactive Service Call Graphs: Effort Assessment'. In: ***Next Generation Data Science: Second Southwest Data Science Conference, SDSC 2023, Waco, TX, USA, March 24–25, 2023, Revised Selected Papers***. Vol. 2113. Springer Nature. 2024, pp. 212–227.

[21] Richard Hutcheson, Austin Blanchard, Jack Hale, Noah Lambaria, David Kozak, Amr Abdelfattah and Tomas Cerny. 'Software Architecture Reconstruction for Microservice Systems Using GraalVM Native Image'. In: ***2024 IEEE 31st International Conference on Software Analysis, Evolution and Reengineering (SANER)***. 2024. url: https://github.com/cloudhubs/graal-prophet-utils.

[22] J. Johnson, S. Kharel, A. Mannamplackal, Amr Abdelfattah and Tomas Cerny. 'Service Weaver: A Promising Direction for Cloud-Native Systems?' In: ***In Proceedings of the 14th International Conference on Cloud Computing and Services Science***. INSTICC. SciTePress, 2024, pp. 167–175.

Annotation: *Short Paper*.
Acceptance Rate: *33%*.

[23] Ernesto Quevedo, Jorge Yero, Rachel Koerner, Pablo Rivas and Tomas Cerny. 'Detecting Hallucinations in Large Language Model Generation: A Token Probability Approach'. In: 2024.

[24] Pablo Rivas, Tomas Cerny, Alejandro Rodriguez Perez, Javier Turek, Laurie Giddens, Gisela Bichler and Stacie Petter. 'On the Challenges of Creating Datasets for Analyzing Commercial Sex Advertisements to Assess Human Trafficking Risk and Organized Activity'. In: 2024.

[25] Simon Schneider, Alexander Bakhtin, Xiaozhou Li, Jacopo Soldani, Antonio Brogi, Tomas Cerny, Riccardo Scandariato and Davide Taibi. 'Comparison of Static Analysis Architecture Recovery Tools for Microservice Applications'. In: 2024.

[26] Korn Sooksatra, Md Showkat Hossain Chy, Muhmmad Ashfakur Rahman Arju, Tomas Cerny and Pablo Rivas. 'Using Static Analysis to Aid Monolith to Microservice System Transformation: Tuning Fuzzy c-Means in a VAE-Based GNN Approach'. In: ***Proceedings of the 39th IEEE/ACM International Conference on Automated Software Engineering Workshops***. 2024, pp. 43–53.

2023

Journals

[27] Amr S Abdelfattah, Alejandro Rodriguez, Andrew Walker and Tomas Cerny. 'Detecting Semantic Clones in Microservices Using Components'. In: ***SN Computer Science*** 4.5 (2023), p. 470.

[28] Amr S. Abdelfattah and Tomas Cerny. 'Roadmap to Reasoning in Microservice systems: A Rapid Review'. In: ***Applied Sciences*** 13.3 (2023). doi: https://doi.org/10.3390/app13031838.

Impact Factor: *2.838, Quartile: Q3 (Computer Science Applications)*.

[29] Tomas Cerny, Amr S. Abdelfattah, Abdullah Al Maruf, Andrea Janes and Davide Taibi. 'Catalog and detection techniques of microservice anti-patterns and bad smells: A tertiary study'. In: ***Journal of Systems and Software*** (2023), p. 111829. issn: 0164-1212. doi: https://doi.org/10.1016/j.jss.2023.111829.

Impact Factor: *3.5, Quartile: Q1 (Software)*.

[30] Md Showkat Hossain Chy, Muhammad Ashfakur Rahman Arju, Sri Manjusha Tella and Tomas Cerny. 'Comparative Evaluation of Java Virtual Machine-Based Message Queue Services: A Study on Kafka, Artemis, Pulsar, and RocketMQ'. In: ***Electronics*** 12.23 (2023), p. 4792.

[31] Xiaozhou Li, Amr S Abdelfattah, Ruoyu Su, Joseph Lee, Ernesto Aponte, Rachel Koerner, Tomas Cerny and Davide Taibi. 'Metrics and Models for Developer Collaboration Analysis in Microservice-Based Systems. A Systematic Mapping Study'. In: (2023).

[32] Garrett Parker, Samuel Kim, Abdullah Al Maruf, Tomas Cerny, Karel Frajtak, Pavel Tisnovsky and Davide Taibi. 'Visualizing Anti-Patterns in Microservices at Runtime: A Systematic Mapping Study'. In: ***IEEE Access*** (2023).

Impact Factor: *3.476, Quartile: Q1 (Computer Science)*.

[33] Ernesto Quevedo, Tomas Cerny, Alejandro Rodriguez, Pablo Rivas, Jorge Yero, Korn Sooksatra, Alibek Zhakubayev and Davide Taibi. 'Legal Natural Language Processing from 2015-2022: A Comprehensive Systematic Mapping Study of Advances and Applications'. In: ***IEEE Access*** (2023).

[34] Md Shahidur Rahaman, Agm Islam, Tomas Cerny and Shaun Hutton. 'Static-Analysis-Based Solutions to Security Challenges in Cloud-Native Systems: Systematic Mapping Study'. In: ***Sensors*** 23.4 (2023). issn: 1424-8220. doi: 10.3390/s23041755.

Impact Factor: *3.847, Quartile: Q2 (Information Systems)*.

[35] Md Shahidur Rahaman, Sadia Nasrin Tisha, Eunjee Song and Tomas Cerny. 'Access Control Design Practice and Solutions in Cloud-Native Architecture: A Systematic Mapping Study'. In: ***Sensors*** 23.7 (2023), p. 3413.

Impact Factor: *3.847, Quartile: Q2 (Information Systems)*.

Conferences

[36] Amr S Abdelfattah, Tomas Cerny, Jorge Yero Salazar, Austin Lehman, Joshua Hunter, Ashley Bickham and Davide Taibi. 'End-to-End Test Coverage Metrics in Microservice Systems: An Automated Approach'. In: ***European Conference on Service-Oriented and Cloud Computing***. Springer. 2023, pp. 35–51.

[37] Amr S Abdelfattah, Tomas Cerny, Davide Taibi and Sira Vegas. 'Comparing 2d and augmented reality visualizations for microservice system understandability: a controlled experiment'. In: ***2023 IEEE/ACM 31st International Conference on Program Comprehension (ICPC)***. IEEE. 2023, pp. 135–145.

Acceptance Rate: *33%*.

[38] Amr S. Abdelfattah and Tomas Cerny. 'The Microservice Dependency Matrix'. In: ***Service-Oriented and Cloud Computing***. Ed. by George A. Papadopoulos, Florian Rademacher and Jacopo Soldani. Cham: Springer Nature Switzerland, 2023, pp. 276–288. isbn: 978-3-031-46235-1.

[39] Amr Abdelfattah. and Tomas Cerny. 'Filling The Gaps in Microservice Frontend Communication: Case for New Frontend Patterns'. In: ***Proceedings of the 13th International Conference on Cloud Computing and Services Science - CLOSER,*** INSTICC. SciTePress, 2023, pp. 184–193. isbn: 978-989-758-650-7. doi: 10.5220/0011812500003488.

[40] Amr Abdelfattah., Micah Schiewe., Jacob Curtis., Tomas Cerny. and Eunjee Song. 'Towards Security-Aware Microservices: On Extracting Endpoint Data Access Operations to Determine Access Rights'. In: ***Proceedings of the 13th International Conference on Cloud Computing and Services Science - CLOSER,*** INSTICC. SciTePress, 2023, pp. 15–23. isbn: 978-989-758-650-7. doi: 10.5220/0011707500003488.

Annotation: *Shortlisted for Best Student Paper Award*.

[41] Lauren Adams, Francis Boyle, Patrick Boyle, Dario Amoroso D'Aragona, Tomas Cerny and Davide Taibi. 'ChatGPT for Microservice Development: How far can we go?' In: ***Microservices 2023***. 2023, pp. 1–6.

[42] Dario Amoroso d'Aragona, Xiaozhou Li, Tomas Cerny, Andrea Janes, Valentina Lenarduzzi and Davide Taibi. 'One microservice per developer: is this the trend in OSS?' In: ***European Conference on Service-Oriented and Cloud Computing***. Springer. 2023, pp. 19–34.

[43] Vincent Bushong, Michael Coffey, Austin Lehman, Eric Jaroszewski and Tomas Cerny. 'Matching Code Patterns Across Programming Language'. In: ***The Recent Advances in Transdisciplinary Data Science: First Southwest Data Science Conference, SDSC 2022, Waco, TX, USA, March 25–26, 2022, Revised Selected Papers***. Springer Nature Switzerland Cham. 2023, pp. 180–184.

[44] Ernesto Caballero, Jeff Donahoo and Tomas Cerny. 'Fairness Analysis of Deep Reinforcement Learning based Multi-Path QUIC Scheduling'. In: ***Proceedings of the 38th ACM/SIGAPP Symposium on Applied Computing***. SAC '23. Tallinn, Estonia: Association for Computing Machinery, 2023. doi: https://doi.org/10.1145/3555776.3577658.

Acceptance Rate: *12.5% (WCN track)*.

[45] Tomas Cerny and Davide Taibi. 'Microservice-Aware Static Analysis: Opportunities, Gaps, and Advancements'. In: ***Joint Post-proceedings of the Third and Fourth International Conference on Microservices (Microservices 2020/2022).*** Vol. 111. dagstuhl. 2023, pp–2.

[46] Dipta Das, Rofiqul Islam, Samuel Kim, Tomas Cerny, Karel Frajtak, Miroslav Bures and Pavel Tisnovsky. 'Analyzing Technical Debt by Mapping Production Logs with Source Code'. In: ***The Recent Advances in Transdisciplinary Data Science: First Southwest Data Science Conference, SDSC 2022, Waco, TX, USA, March 25–26, 2022, Revised Selected Papers***. Springer Nature Switzerland Cham. 2023, pp. 200–212.

[47] Nabil El Ioini, Ayoub El Majjodi, David Hastbacka, Tomas Cerny and Davide Taibi. 'Unikernels Motivations, Benefits and Issues: A Multivocal Literature Review'. In: ***Proceedings of the 3rd Eclipse Security, AI, Architecture and Modelling Conference on Cloud to Edge Continuum***. 2023, pp. 39–48.

[48] Laurie Giddens, Stacie Petter, Gisela Bichler, Pablo Rivas, Michael Fullilove and Tomas Cerny. 'Navigating an Interdisciplinary Approach to Cybercrime Research'. In: ***56th Hawaii International Conference on System Sciences***. Hawaii, US, 2023.

[49] Luka Lelovic., Michael Mathews., Amr Abdelfattah. and Tomas Cerny. 'Microservices Architecture Language for Describing Service View'. In: ***Proceedings of the 13th International Conference on Cloud Computing and Services Science - CLOSER,*** INSTICC. SciTePress, 2023, pp. 220–227. isbn: 978-989-758-650-7. doi: 10.5220/0011850200003488.

[50] Xiaozhou Li, Amr S Abdelfattah, Jorge Yero, Dario Amoroso d'Aragona, Tomas Cerny and Davide Taibi. 'Analyzing Organizational Structure of Microservice Projects based on Contributor Collaboration'. In: ***2023 IEEE International Conference on Service-Oriented System Engineering (SOSE)***. IEEE Computer Society. 2023, pp. 1–8.

[51] Rokin Maharjan, Md Showkat Hossain Chy, Muhammad Ashfakur Arju and Tomas Cerny. 'Benchmarking Message Queues'. In: ***Telecom***. Vol. 4. 2. MDPI. 2023, pp. 298–312.

[52] Alejandro Rodriguez Perez, Korn Sooksatra, Pablo Rivas, Ernesto Quevedo Caballero, Javier S Turek, Gisela Bichler, Tomas Cerny, Laurie Giddens and Stacie Petter. 'An Empirical Analysis Towards Replacing Vocabulary-Rigid Embeddings by a Vocabulary-Free Mechanism'. In: ***LatinX in AI Workshop at ICML 2023 (Regular Deadline)***. 2023.

[53] Ernesto Quevedo Caballero, Michael Donahoo and Tomas Cerny. 'Fairness Analysis of Deep Reinforcement Learning based Multi-Path QUIC Scheduling'. In: ***Proceedings of the 38th ACM/SIGAPP Symposium on Applied Computing***. 2023, pp. 1772–1781.

[54] Sheldon Smith, Ethan Robinson, Timmy Frederiksen, Trae Stevens, Tomas Cerny, Miroslav Bures and Davide Taibi. 'Benchmarks for end-to-end microservices testing'. In: ***2023 IEEE International Conference on Service-Oriented System Engineering (SOSE)***. IEEE. 2023, pp. 60–66.

2022

Journals

[55] Dipta Das, Abdullah Al Maruf, Rofiqul Islam, Noah Lambaria, Samuel Kim, Amr S. Abdelfattah, Tomas Cerny, Karel Frajtak, Miroslav Bures and Pavel Tisnovsky. 'Technical Debt Resulting from Architectural Degradation and Code Smells: A Systematic Mapping Study'. In: ***SIGAPP Appl. Comput. Rev.*** 21.4 (Jan. 2022), pp. 20–36. issn: 1559-6915. doi: 10.1145/3512753.3512755. url: https://doi.org/10.1145/3512753.3512755.

[56] Mia E. Gortney, Patrick E. Harris, Tomas Cerny, Abdullah Al Maruf, Miroslav Bures, Davide Taibi and Pavel Tisnovsky. 'Visualizing Microservice Architecture in the Dynamic Perspective: A Systematic Mapping Study'. In: ***IEEE Access*** 10 (2022), pp. 119999–120012. doi: 10.1109/ACCESS.2022.3221130.

Impact Factor: *3.476, Quartile: Q1 (Computer Science)*.

[57] Md Rofiqul Islam, Abdullah Al Maruf and Tomas Cerny. 'Code Smell Prioritization with Business Process Mining and Static Code Analysis: A Case Study'. In: ***Electronics*** 11.12 (2022). issn: 2079-9292. doi: 10.3390/electronics11121880. url: https://www.mdpi.com/2079-9292/11/12/1880.

Impact Factor: *2.690, Quartile: Q2 (Computer Science - Computer Networks and Communications)*.

[58] Matej Klima, Miroslav Bures, Karel Frajtak, Vaclav Rechtberger, Michal Trnka, Xavier Bellekens, Tomas Cerny and Bestoun S. Ahmed. 'Selected Code-Quality Characteristics and Metrics for Internet of Things Systems'. In: ***IEEE Access*** 10 (2022), pp. 46144–46161. doi: 10.1109/ACCESS.2022.3170475.

Impact Factor: *3.476, Quartile: Q1 (Computer Science)*.

[59] Micah Schiewe, Jacob Curtis, Vincent Bushong and Tomas Cerny. 'Advancing Static Code Analysis With Language-Agnostic Component Identification'. In: ***IEEE Access*** 10 (2022), pp. 30743–30761. doi: 10.1109/ACCESS.2022.3160485.

Impact Factor: *3.476, Quartile: Q1 (Computer Science)*.

[60] Michal Trnka, Amr S. Abdelfattah, Aishwarya Shrestha, Michael Coffey and Tomas Cerny. 'Systematic Review of Authentication and Authorization Advancements for the Internet of Things'. In: ***Sensors*** 22.4 (2022). issn: 1424-8220. doi: 10.3390/s22041361. url: https://www.mdpi.com/1424-8220/22/4/1361.

Impact Factor: *3.847, Quartile: Q2 (Information Systems)*.

Book chapters

[61] Karel Frajtak and Tomas Cerny. 'On Persistent Implications of E2E Testing'. In: ***Enterprise Information Systems. ICEIS 2021***. Cham: Springer International Publishing, 2022, pp. 326–338. isbn: 978-3-031-08965-7. doi: 10.1007/978-3-031-08965-7_16.

Annotation: *Invited by editor*.

Conferences

[62] Amr S Abdelfattah and Tomas Cerny. 'Microservices Security Challenges and Approaches'. In: ***Information Systems Development: Artificial Intelligence for Information Systems Development and Operations (ISD2022 Proceedings).*** Romania: Babes-Bolyai University. AIS eLibrary, 2022. url: https://aisel.aisnet.org/isd2014/proceedings2022/currenttopics/7.

Annotation: *Short paper*.
Acceptance Rate: *41%*.

[63] Abdullah Al Maruf, Alexander Bakhtin, Tomas Cerny and Davide Taibi. 'Using Microservice Telemetry Data for System Dynamic Analysis'. In: *2022 IEEE International Conference on Service-Oriented System Engineering (SOSE)*. 2022, pp. 29–38. doi: 10.1109/SOSE55356.2022.00010.

Acceptance Rate: *32%*.

[64] Alexander Bakhtin, Abdullah Al Maruf, Tomas Cerny and Davide Taibi. 'Survey on Tools and Techniques Detecting Microservice API Patterns'. In: *2022 IEEE International Conference on Services Computing (SCC)*. 2022, pp. 31–38. doi: 10.1109/SCC55611.2022.00018.

Acceptance Rate: *32.4%*.

[65] Kaitlynn Burgess, Dante Hart, Amr Elsayed, Tomas Cerny, Miroslav Bures and Pavel Tisnovsky. 'Visualizing Architectural Evolution via Provenance Tracking: A Systematic Review'. In: *Proceedings of the Conference on Research in Adaptive and Convergent Systems*. RACS '22. Virtual Event, Japan: Association for Computing Machinery, 2022, pp. 83–91. isbn: 9781450393980. doi: 10.1145/3538641.3561493. url: https://doi.org/10.1145/3538641.3561493.

Acceptance Rate: *46%*.

[66] Vincent Bushong., Dipta Das. and Tomas Cerny. 'Reconstructing the Holistic Architecture of Microservice Systems using Static Analysis'. In: *Proceedings of the 12th International Conference on Cloud Computing and Services Science - CLOSER,* INSTICC. SciTePress, 2022, pp. 149–157. isbn: 978-989-758-570-8. doi: 10.5220/0011032100003200.

Annotation: *Short Paper*.
Acceptance Rate: *33%*.

[67] Ernesto Quevedo Caballero, Mushfika Sharmin Rahman, Tomas Cerny, Pablo Rivas and Gissella Bejarano. 'Study of Question Answering on Legal Software Document using BERT based models'. In: *LatinX in Natural Language Processing Research Workshop*. 2022.

Annotation: *2nd Best Paper Award*.
Acceptance Rate: *62.5%*.

[68] Tomas Cerny, Amr S. Abdelfattah, Vincent Bushong, Abdullah Al Maruf and Davide Taibi. 'Microservice Architecture Reconstruction and Visualization Techniques: A Review'. In: *2022 IEEE International Conference on Service-Oriented System Engineering (SOSE)*. 2022, pp. 39–48. doi: 10.1109/SOSE55356.2022.00011.

Acceptance Rate: *32%*.

[69] Tomas Cerny, Amr S. Abdelfattah, Vincent Bushong, Abdullah Al Maruf and Davide Taibi. 'Microvision: Static analysis-based approach to visualizing microservices in augmented reality'. In: *2022 IEEE International Conference on Service-Oriented System Engineering (SOSE)*. 2022, pp. 49–58. doi: 10.1109/SOSE55356.2022.00012.

Acceptance Rate: *32%*.

[70] Tomas Cerny and Davide Taibi. 'Static analysis tools in the era of cloud-native systems'. In: *2022 Microservices*. 2022.

Annotation: *Best Tool and Best Presentation Awards*.
Acceptance Rate: *75%*.

[71] Raisa Islam, Tomas Cerny and Dongwan Shin. 'Ontology-Based User Privacy Management in Smart Grid'. In: *Proceedings of the 37th ACM/SIGAPP Symposium on Applied Computing*. SAC '22. Virtual Event: Association for Computing Machinery, 2022, pp. 174–182. doi: 10.1145/3477314.3508383.

Acceptance Rate: *22.28%*.

[72] Noah Lambaria and Tomas Cerny. 'A Data Analysis Study of Code Smells within Java Repositories'. In: *17th Conference on Computer Science and Intelligence Systems*. 2022, pp. 313–318.

Annotation: *Communication paper*.
Acceptance Rate: *61%*.

[73] Luka Lelovic, Michael Mathews, Amr Elsayed, Tomas Cerny, Karel Frajtak, Pavel Tisnovsky and Davide Taibi. 'Architectural Languages in the Microservice Era: A Systematic Mapping Study'. In: *Proceedings of the Conference on Research in Adaptive and Convergent Systems*. RACS '22. Virtual Event, Japan: Association for Computing Machinery, 2022, pp. 39–46. isbn: 9781450393980. doi: 10.1145/3538641.3561486. url: https://doi.org/10.1145/3538641.3561486.

Acceptance Rate: *46%*.

[74] Pablo Rivas, Gisela Bichler, Tomas Cerny, Laurie Giddens and Stacie Petter. 'Bottleneck-based Encoder-decoder ARchitecture (BEAR) for Learning Unbiased Consumer-to-Consumer Image Representations'. In: *Proceedings of the 39th International Conference on Machine Learning, PMLR 162, 2022At: Baltimore, Maryland, USA*. 2022, pp. 1–7.

[75] Korn Sooksatra, Rokin Maharjan and Tomas Cerny. 'Monolith to Microservices: VAE-Based GNN Approach with Duplication Consideration'. In: *2022 IEEE International Conference on Service-Oriented System Engineering (SOSE)*. 2022, pp. 1–10. doi: 10.1109/SOSE55356.2022.00007.

Annotation: *Best Paper Award*.
Acceptance Rate: *32%*.

[76] Jan Svacina., Vincent Bushong., Dipta Das. and Tomas Cerny. 'Semantic Code Clone Detection Method for Distributed Enterprise Systems'. In: ***Proceedings of the 12th International Conference on Cloud Computing and Services Science - CLOSER,*** INSTICC. SciTePress, 2022, pp. 27–37. isbn: 978-989-758-570-8. doi: 10.5220/0011032200003200.

Annotation: *Best Industry Paper*.
Acceptance Rate: *20%*.

2021

Journals

[77] Vincent Bushong, Amr S. Abdelfattah, Abdullah A. Maruf, Dipta Das, Austin Lehman, Eric Jaroszewski, Michael Coffey, Tomas Cerny, Karel Frajtak, Pavel Tisnovsky and Miroslav Bures. 'On Microservice Analysis and Architecture Evolution: A Systematic Mapping Study'. In: ***Applied Sciences*** 11.17 (2021). issn: 2076-3417. doi: 10.3390/app11177856. url: https://www.mdpi.com/2076-3417/11/17/7856.

Impact Factor: *2.838, Quartile: Q3 (Computer Science Applications)*.

[78] Dipta Das, Andrew Walker, Vincent Bushong, Jan Svacina, Tomas Cerny and Vashek Matyas. 'On automated RBAC assessment by constructing a centralized perspective for microservice mesh'. In: ***PeerJ Computer Science*** 7 (2021), e376. doi: 10.7717/peerj-cs.376.

Impact Factor: *1.392, Quartile: Q2 (Computer Science)*.

Book chapters

[79] Vincent Bushong, Jacob Curtis, Russell Sanders, Mark Du, Tomas Cerny, Karel Frajtak, Pavel Tisnovsky and Dongwan Shin. 'On Log Analysis and Stack Trace Use to Improve Program Slicing'. In: ***Information Science and Applications***. Springer, Singapore, 2021, pp. 265–275.

Acceptance Rate: *39.3%*.

[80] Schaeffer Duncan, Andrew Walker, Caleb DeHaan, Stephanie Alvord, Tomas Cerny and Pavel Tisnovsky. 'Pyclone: A Python Code Clone Test Bank Generator'. In: ***Information Science and Applications***. Springer, 2021, pp. 235–243.

Acceptance Rate: *39.3%*.

[81] Jackson Raffety, Brooklynn Stone, Jan Svacina, Connor Woodahl, Tomas Cerny and Pavel Tisnovsky. 'Multi-source log clustering in distributed systems'. In: ***Information Science and Applications***. Springer, Singapore, 2021, pp. 31–41.

Acceptance Rate: *39.3%*.

[82] Jan Svacina, Vincent Bushong, Dipta Das and Tomas Cerny. 'A Comprehensive Enterprise System Metamodel for Quality Assurance'. In: ***Information Science and Applications***. Springer, Singapore, 2021, pp. 245–252.

Acceptance Rate: *39.3%*.

[83] Andrew Walker, Dipta Das and Tomas Cerny. 'Automated microservice code-smell detection'. In: ***Information Science and Applications***. Springer, Singapore, 2021, pp. 211–221.

Acceptance Rate: *39.3%*.

[84] Andrew Walker, Ian Laird and Tomas Cerny. 'On automatic software architecture reconstruction of microservice applications'. In: ***Information Science and Applications***. Springer, Singapore, 2021, pp. 223–234.

Acceptance Rate: *39.3%*.

Conferences

[85] Abdullah Al Maruf, Noah Lambaria, Amr S Abdelfattah and Tomas Cerny. 'Using Version Control and Issue Tickets to detect Code Debt and Economical Cost'. In: ***2021 36th IEEE/ACM International Conference on Automated Software Engineering (ASE)***. IEEE. 2021, pp. 1208–1209.

Annotation: *Late Breaking Results*.

[86] Vincent Bushong, Dipta Das, Abdullah Al Maruf and Tomas Cerny. 'Using Static Analysis to Address Microservice Architecture Reconstruction'. In: ***2021 36th IEEE/ACM International Conference on Automated Software Engineering (ASE)***. IEEE. 2021, pp. 1199–1201.

Annotation: *Late Breaking Results*.

[87] Mark Fuller, Elizabeth Brighton, Micah Schiewe, Dipta Das, Tomas Cerny and Pavel Tisnovsky. 'Automated error log resolution: a case study'. In: ***Proceedings of the 36th Annual ACM Symposium on Applied Computing***. 2021, pp. 1298–1304.

Acceptance Rate: *24.9%*.

[88] Md Rofiqul Islam and Tomas Cerny. 'Business Process Extraction Using Static Analysis'. In: ***2021 36th IEEE/ACM International Conference on Automated Software Engineering (ASE)***. IEEE. 2021, pp. 1202–1204.

Annotation: *Late Breaking Results*.

[89] Vincent Lombardi, Sarah Ortiz, Jen Phifer, Tomas Cerny and Dongwan Shin. 'Behavior control-based approach to influencing user's cybersecurity actions using mobile news app'. In: *Proceedings of the 36th Annual ACM Symposium on Applied Computing*. 2021, pp. 912–915.

Acceptance Rate: *24.9%*.

[90] Jacob Marks, Brandon Montano, Jiwan Chong, Manjusha Raavi, Raisa Islam, Tomas Cerny and Dongwan Shin. 'Differential privacy applied to smart meters: a mapping study'. In: *Proceedings of the 36th Annual ACM Symposium on Applied Computing*. 2021, pp. 761–770.

Acceptance Rate: *24.9%*.

[91] Denton Wood. and Tomas Cerny. 'Database-Conscious End-to-End Testing for Reactive Systems using Containerization'. In: *Proceedings of the 23rd International Conference on Enterprise Information Systems - Volume 2: ICEIS*. INSTICC. SciTePress, 2021, pp. 377–383. isbn: 978-989-758-509-8. doi: 10.5220/0010494403770383.

Annotation: *Short Paper*.
Acceptance Rate: *37%*.

2020

Journals

[92] Tomas Cerny, Jan Svacina, Dipta Das, Vincent Bushong, Miroslav Bures, Pavel Tisnovsky, Karel Frajtak, Dongwan Shin and Jun Huang. 'On code analysis opportunities and challenges for enterprise systems and microservices'. In: *IEEE Access* 8 (2020), pp. 159449–159470.

Impact Factor: *3.476, Quartile: Q1 (Computer Science)*.

[93] Jun Huang, Baohua Yu, Cong-cong Xing, Tomas Cerny and Zhaolong Ning. 'Online Energy Scheduling Policies in Energy Harvesting Enabled D2D Communications'. In: *IEEE Transactions on Industrial Informatics* (2020).

Impact Factor: *10.215, Quartile: Q1 (Computer Science Applications)*.

[94] Andrew Walker and Tomas Cerny. 'On cloud computing infrastructure for existing code-clone detection algorithms'. In: *ACM SIGAPP Applied Computing Review* 20.1 (2020), pp. 5–14.

[95] Andrew Walker, Tomas Cerny and Eungee Song. 'Open-source tools and benchmarks for code-clone detection: past, present, and future trends'. In: *ACM SIGAPP Applied Computing Review* 19.4 (2020), pp. 28–39.

[96] Andrew Walker, Dipta Das and Tomas Cerny. 'Automated code-smell detection in microservices through static analysis: A case study'. In: *Applied Sciences* 10.21 (2020), p. 7800.

Impact Factor: *2.838, Quartile: Q3 (Computer Science Applications)*.

Book chapters

[97] Andrew Walker, Michael Coffey, Pavel Tisnovsky and Tomas Cerny. 'On limitations of modern static analysis tools'. In: *Information Science and Applications*. Springer, Singapore, 2020, pp. 577–586.

Acceptance Rate: *31%*.

[98] Andrew Walker, Jan Svacina, Johnathan Simmons and Tomas Cerny. 'On automated role-based access control assessment in enterprise systems'. In: *Information Science and Applications*. Springer, Singapore, 2020, pp. 375–385.

Acceptance Rate: *31%*.

Conferences

[99] Vincent Bushong, Russell Sanders, Jacob Curtis, Mark Du, Tomas Cerny, Karel Frajtak, Miroslav Bures, Pavel Tisnovsky and Dongwan Shin. 'On Matching Log Analysis to Source Code: A Systematic Mapping Study'. In: *Proceedings of the International Conference on Research in Adaptive and Convergent Systems*. 2020, pp. 181–187.

Acceptance Rate: *28.4%*.

[100] Tomas Cerny, Andrew Walker, Jan Svacina, Vincent Bushong, Dipta Das, Karel Frajtak, Miroslav Bures and Pavel Tisnovsky. 'Mapping Study on Constraint Consistency Checking in Distributed Enterprise Systems'. In: *Proceedings of the International Conference on Research in Adaptive and Convergent Systems*. 2020, pp. 167–174.

Acceptance Rate: *28.4%*.

[101] Dipta Das, Micah Schiewe, Elizabeth Brighton, Mark Fuller, Tomas Cerny, Miroslav Bures, Karel Frajtak, Dongwan Shin and Pavel Tisnovsky. 'Failure prediction by utilizing log analysis: A systematic mapping study'. In: *Proceedings of the International Conference on Research in Adaptive and Convergent Systems*. 2020, pp. 188–195.

Acceptance Rate: *28.4%*.

[102] Jan Svacina, Jackson Raffety, Connor Woodahl, Brooklynn Stone, Tomas Cerny, Miroslav Bures, Dongwan Shin, Karel Frajtak and Pavel Tisnovsky. 'On vulnerability and security log analysis: A systematic literature review on recent trends'. In: *Proceedings of the International Conference on Research in Adaptive and Convergent Systems*. 2020, pp. 175–180.

Acceptance Rate: *28.4%*.

[103] Jan Svacina, Jonathan Simmons and Tomas Cerny. 'Semantic code clone detection for enterprise applications'. In: *Proceedings of the 35th Annual ACM Symposium on Applied Computing*. 2020, pp. 129–131.

Annotation: *Poster*.
Acceptance Rate: *35%*.

2019

Journals

[104] Bestoun S Ahmed, Miroslav Bures, Karel Frajtak and Tomas Cerny. 'Aspects of quality in Internet of Things (IoT) solutions: A systematic mapping study'. In: *IEEE Access* 7 (2019), pp. 13758–13780.

Impact Factor: *3.476, Quartile: Q1 (Computer Science)*.

[105] Miroslav Bures, Tomas Cerny, Karel Frajtak and Bestoun S Ahmed. 'Testing the consistency of business data objects using extended static testing of CRUD matrices'. In: *Cluster Computing* 22.1 (2019), pp. 963–976.

Impact Factor: *3.6, Quartile: Q1 (Software)*.

[106] Tomas Cerny. 'Aspect-oriented challenges in system integration with microservices, SOA and IoT'. In: *Enterprise Information Systems* 13.4 (2019), pp. 467–489.

Impact Factor: *4.35, Quartile: Q1 (Information Systems and Management)*.

[107] Michal Trnka, Jan Svacina, Tomas Cerny, Eunjee Song, Jiman Hong and Miroslav Bures. 'Securing Internet of Things devices using the network context'. In: *IEEE Transactions on Industrial Informatics* 16.6 (2019), pp. 4017–4027.

Impact Factor: *10.215, Quartile: Q1 (Information Systems)*.

Conferences

[108] Abdulrahman Abu Elkhail and Tomas Cerny. 'On relating code smells to security vulnerabilities'. In: *2019 IEEE 5th intl conference on big data security on cloud (BigDataSecurity), IEEE Intl Conference on High Performance and Smart Computing,(HPSC) and IEEE intl conference on intelligent data and security (IDS)*. IEEE. 2019, pp. 7–12.

Acceptance Rate: *22,2%*.

[109] Abdulrahman Abu Elkhail, Jan Svacina and Tomas Cerny. 'Intelligent token-based code clone detection system for large scale source code'. In: *Proceedings of the Conference on Research in Adaptive and Convergent Systems*. 2019, pp. 256–260.

Acceptance Rate: *24,5%*.

[110] Antonin Smid, Ruolin Wang and Tomas Cerny. 'Case study on data communication in microservice architecture'. In: *Proceedings of the Conference on Research in Adaptive and Convergent Systems*. 2019, pp. 261–267.

Acceptance Rate: *24,5%*.

2018

Journals

[111] Tomas Cerny, Michael J Donahoo and Michal Trnka. 'Contextual understanding of microservice architecture: current and future directions'. In: *ACM SIGAPP Applied Computing Review* 17.4 (2018), pp. 29–45.

[112] Tomas Cerny and Michael Jeff Donahoo. 'Second screen engagement of event spectators'. In: *Advances in Human-Computer Interaction* 2018 (2018).

Impact Factor: *2.86, Quartile Q3 (Human-Computer Interaction)*.

[113] Min Hong, Taesik Kim, Junyoung Heo, Tomas Cerny, Sriram Sankaran, Bestoun S Ahmed and Jinman Jung. 'Pattern matching based sensor identification layer for an android platform'. In: *Wireless Communications & Mobile Computing* 2018 (2018).

Impact Factor: *2.336, Quartile Q2 (Computer Networks and Communications)*.

[114] Matrtin Tomasek and Tomas Cerny. 'Automated user interface generation involving field classification'. In: *Software Networking* 2018.1 (2018), pp. 53–78.

[115] Michal Trnka and Tomas Cerny. 'Authentication and authorization rules sharing for internet of things'. In: *Software Networking* 2018.1 (2018), pp. 35–52.

[116] Michal Trnka, Tomas Cerny and Nathaniel Stickney. 'Survey of Authentication and Authorization for the Internet of Things'. In: *Security and Communication Networks* 2018 (2018).

Impact Factor: *1.791, Quartile Q2 (Computer Networks and Communications)*.

Conferences

[117] Miroslav Bures, Tomas Cerny and Bestoun S Ahmed. 'Internet of things: Current challenges in the quality assurance and testing methods'. In: *International conference on information science and applications*. Springer, Singapore. 2018, pp. 625–634.

Acceptance Rate: *29%*.

[118] Tomas Cerny and Michael Jeff Donahoo. 'Survey on Compromise-Defensive System Design'. In: *International Conference on Information Science and Applications*. Springer, Singapore. 2018, pp. 513–521.

Acceptance Rate: *29%*.

[119] Tomas Cerny, Filip Sedlisky and Michael J Donahoo. 'On isolation-driven automated module decomposition'. In: *Proceedings of the 2018 Conference on Research in Adaptive and Convergent Systems*. 2018, pp. 302–307.

Acceptance Rate: *24,4%*.

[120] Safwan Mawlood Hussein, Michael J Donahoo and Tomas Cerny. 'Security Challenges in Smart City Applications'. In: *Int'l Conf. Security and Management | SAM'18*. ISBN: 1-60132-488-X, CSREA Press ©. 2018, pp. 306–310.

Acceptance Rate: *19%*.

[121] Jiri Sebek, Petr Vondrus and Tomas Cerny. 'Degree of Similarity of Root Trees'. In: *International Conference on Information Science and Applications*. Springer, Singapore. 2018, pp. 581–591.

Acceptance Rate: *29%*.

[122] Michal Trnka, Filip Rysavy, Tomas Cerny and Nathaniel Stickney. 'Using Wi-Fi enabled Internet of Things devices for context-aware authentication'. In: *International Conference on Information Science and Applications*. Springer, Singapore. 2018, pp. 635–642.

Acceptance Rate: *29%*.

[123] Michal Trnka, Jan Svacina, Tomas Cerny and Eunjee Song. 'Aspect oriented context-aware and event-driven data processing for internet of things'. In: *Proceedings of the 2018 Conference on Research in Adaptive and Convergent Systems*. 2018, pp. 319–323.

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