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Research Neural Networks, Machine Learning, Cyber Security, AI for
Security/Security for AI, Privacy-Preserving Federated Learning,
Text Mining, Big Data Applications, etc.



Awards (Selected)

1. Seiichi Ozawa, APNNS Excellent Service Award, Asia Pacific Neural Network Society, December, 2019.
2. EAIS 2011 Outstanding Paper Award, IEEE SCIS 2011, IEEE Workshop on Evolving and Adaptive Intelligent Systems (2011.4.11-15, Paris)

Recent Research Projects

1. Machine Learning over Encrypted Data for Privacy-Preserving Data Mining
2. Cybersecurity Using Machine Learning (malicious sites/JavaScript detection, attack monitoring)
3. Analyst document analysis for predicting financial market trends

Book & Book Chapters (Selected)

1. Cesare Alippi, Seiichi Ozawa, " Computational Intelligence in the Time of Cyber-Physical Systems and the Internet-of-Things, " in Artificial Intelligence in the Age of Neural Networks and Brain Computing, Robert Kozma, Cesare Alippi, Yoonsuck Choe, Francesco Morabito (Eds.), Elsevier, pp. 245-263, November 2018.
2. Seiichi Ozawa, Shaoning. Pang, and Nikola Kasabov, "Online Feature Extraction for Evolving Intelligent Systems," in Evolving Intelligent Systems: Methodology and Applications, Plamen Angelov, Dimitar P. Filev, Nik Kasabov, Eds, Wiley-IEEE Press, pp. 151-172, March 2010.

Journal Papers (selected)

1. Urade T, Yamasaki N, Uemura M, Hirata J, Okamura Y, Mitani Y, Hattori T, Nanchi K, Ozawa S, Chihara Y, Chinzei K, Fujisawa M, Fukumoto T., "Assessment of first-touch skills in robotic surgical training using hi-Sim and the hinotori surgical robot system among surgeons and novices," Langenbeck's Archives of Surgery, 409(1):332. November 2024.
2. M. F. Rozi, T. Ban, S. Ozawa, A. Yamada, T. Takahashi and D. Inoue, "Securing Code With Context: Enhancing Vulnerability Detection Through Contextualized Graph Representations," IEEE Access, vol. 12, pp. 142101-142126, 2024.
3. Muhammad Fakhrur Rozi, Tao Ban, Seiichi Ozawa, Akira Yamada, Takeshi Takahashi, Sangwook Kim, and Daisuke Inoue. "Detecting Malicious JavaScript Using Structure-Based Analysis of Graph Representation." IEEE Access. vol. 11, pp. 102727-102745. 2023.
4. Rozi Muhammad Fakhrur, Seiichi Ozawa, Tao Ban, Sangwook Kim, Takeshi Takahashi, and Daisuke Inoue, "Understanding the Influence of AST-JS for Improving Malicious Webpage Detection", Applied Sciences 12, no. 24: 12916, December 2022
5. Parichehr Behjati, Pau Rodríguez, Carles Fernández Tena, Armin Mehri, F. Xavier Roca, Seiichi Ozawa, Jordi González, "Frequency-Based Enhancement Network for Efficient Super-Resolution," IEEE Access, vol. 10, pp. 57383-57397, 2022.

6. F. Yamamoto, S. Ozawa and L. Wang, "eFL-Boost: Efficient Federated Learning for Gradient Boosting Decision Trees," *IEEE Access*, vol. 10, pp. 43954-43963, 2022.
7. D. A. Velazquez, J. M. Gonfaus, P. Rodríguez, F. X. Roca, S. Ozawa and J. González,, "Logo Detection With No Priors," *IEEE Access*, vol. 9, pp. 106998-107011, 2021.
8. Seiichi Ozawa, Tao Ban, Naoki Hashimoto, Junji Nakazato, Jumpei Shimamura, "A Study of IoT Malware Activities Using Association Rule Learning for Darknet Sensor Data," *International Journal of Information Security*, vol. 19, no. 1, pp. 83-92, January 2020.
9. Samuel Ndichu, Sangwook Kim, Seiichi Ozawa, Takeshi Misu, Kazuo Makishima, "A Machine Learning Approach to Detection of JavaScript-based Attacks Using AST Features and Paragraph Vectors," *Applied Soft Computing*, vol. 84, pp. 1-11, November 2019.
10. Igor Skrjanc, Seiichi Ozawa, Dejan Dovzan, "Large-Scale Cyber Attacks Monitoring using Evolving Cauchy Possibilistic Clustering." *Applied Soft Computing*, Vol. 62, pp. 592-601, January 2018.
11. Y. Choi, S. Ozawa, and M. Lee, "Incremental Two-dimensional Kernel Principal Component Analysis," *Neurocomputing*, Vol. 134, pp. 280-288, June 2014.
12. Hitoshi Nishikawa and Seiichi Ozawa, "Radial Basis Function Network for Multitask Pattern Recognition," *Neural Processing Letters*, Vol. 33, No. 3, pp. 283-299, June 2011.
13. Masayuki Hisada, Seiichi Ozawa, Kau Zhang, and Nikola Kasabov, "Incremental Linear Discriminant Analysis for Evolving Feature Spaces in Multitask Pattern Recognition Problems," *Evolving Systems*, Springer, Vol. 1, No. 1, pp. 17-27, August 2010.
14. Seiichi Ozawa, Asim Roy, Dmitri Roussinov, "A Multitask Learning Model for Online Pattern Recognition," *IEEE Trans. on Neural Networks*, Vol. 20, No. 3, pp. 430-445, March 2009.
15. Seiichi Ozawa, Shaoning Pang, and Nikola Kasabov, "Incremental Learning of Chunk Data for On-line Pattern Classification Systems," *IEEE Trans. on Neural Networks*, Vol. 19, No. 6, pp. 1061-1074 (2008.6)
16. Seiichi Ozawa, Shaoning Pang, and Nikola Kasabov, "On-line Feature Selection for Adaptive Evolving Connectionist Systems," *International Journal of Innovative Computing, Information and Control*, Vol. 2, No. 1, pp. 181-192 (2006.2)
17. Seiichi Ozawa, Shaoning Pang, and Nikola Kasabov, "Incremental Learning of Feature Space and Classifier for On-Line Pattern Recognition," *International Journal of Knowledge-Based & Intelligent Engineering Systems*, Vol. 10, No. 1, pp. 57-65 (2006.1)
18. Shaoning Pang, Seiichi Ozawa, and Nikola Kasabov, "Incremental Linear Discriminant Analysis for Classification of Data Streams," *IEEE Trans. on Systems, Man, and Cybernetics - Part B*. Vol. 35, No. 5, pp. 905-914 (2005.10)
19. S. Ozawa, S. L. Toh, S. Abe, S. Pang, and N. Kasabov, "Incremental Learning of Feature Space and Classifier for Face Recognition," *Neural Networks*, Vol. 18, Nos. 5-6, pp. 575-584 (2005.7-8)
20. Manabu Kotani and Seiichi Ozawa, "Detection of Gas Leakage Sound Using Modular Neural Network for Unknown Environments," *Neurocomputing*, Vol. 62C, pp. 427-440 (2004.10)

Editors of International Journals

- IEEE Trans. on Cybernetics - Associate Editor
- Evolving Systems (Springer), Editorial Board Member
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International Research Collaborations

1. Large-Scale Cyber Attacks Monitoring using Evolving Cauchy Possibilistic Clustering
Prof. Igor Skrjanc, Faculty of Electrical Engineering, University of Ljubljana, Slovenia (2016-)
2. Learning from SNS Big Data and Its Application to Flaming Detection
Dr. Nistor Grozavu, Paris 13 University, France (2015-2019)
3. Ensemble Classifier Model Using Multimodal Features for Multitask Pattern Recognition Problems
Prof. Minhoo Lee, Kyungpook National University, Korea (2012-2014)
4. Online Feature Extraction and Incremental Learning for Spiking Neural Networks
Prof. Nikola Kasabov and Dr. Shaoning Pang, Knowledge Engineering and Discovery Research Institute (KEDRI), Auckland University of Technology, New Zealand (2003-2008)