Niken Prasasti MARTONO (npmartono@gmail.com)

List of Research Achievements (as of January, 2026)

PEER-REVIEWED ARTICLE (ENGLISH)

1. Martono, N. P., Tsukamoto, R., & Ohwada, H. (2025). An Internet of Things Approach to Vision-Based Livestock Monitoring: PTZ Cameras for Dairy Cow Identification. *Telecom*, 6(4), 82. MDPI.
2. Fikry, M. M., Mack, J. P., Mirza, F., Martono, N. P., Tan, K. T., Vinogradov, V., & Ogihara, S. (2025). A Machine Learning-Driven Approach to Predict Mechanical Degradation Associated with Matrix Cracks in Fiber-Reinforced Composite Laminates. *Next Materials*, 9, 101209.
3. Martono, N. P., Mahdy, F., & Juliavionni, S. (2025). Comparative Analysis of Battery Swapping in Motorcycle EVs and Charging Services for Car EVs: A Case Study of Indonesia. *Transportation Research Procedia*, 92, 219–226. https://doi.org/10.1016/j.trpro.2025.12.123
4. Seo, Y., Yamaguchi, K., Aprilianty, F., & Martono, N. P. (2025). Cultural Familiarity and Religious Adherence: Exploring Muslim Consumers' Willingness to Purchase Halal Food from Non-Islamic Countries—A Case Study of Japan. *Journal of Islamic Marketing*. (Impact Factor: 3.1)
5. Martono, N. P., & Ohwada, H. (2024). Evaluating the Impact of Windowing Techniques on Fourier Transform-Preprocessed Signals for Deep Learning-Based ECG Classification. *Hearts*, 5(4), 501–515.
6. Martono, N. P., Sawada, T., Uchino, T., & Ohwada, H. (2024). Deep Learning-Based Indoor Localization Using Wireless Sensor Networks: An Efficient Approach for Livestock Monitoring. *Vietnam Journal of Computer Science*, 1–17. (Impact Factor: 1.1)
7. Uchino, T., Martono, N. P., Ohwada, H., & Hatazoe, T. (2023). Advancements in Precision Agriculture for Foaling with Automated Water Break Detection Using Image Recognition Technology. *International Journal of Agriculture and Biology*, 30(5), 342–348. (Impact Factor: 0.82)
8. Martono, N. P., Abe, K., Yamaguchi, T., & Ohwada, H. (2018). An Analysis of Motion Transition in Subtle Errors Using Inductive Logic Programming: A Case Study in Approaches to Mild Cognitive Impairment. *International Journal of Software Science and Computational Intelligence*, 10(1), 27–37. (Impact Factor: 2.4)
9. Niken P. Martono., Yamaguchi, T., Maeta, T., Fujino, H., Kubota, Y., Ohwada, H., & Giovannetti, T. (2016). Clustering Finger Motion Data from Virtual Reality-Based Training to Analyze Patients with Mild Cognitive Impairment. *International Journal of Software Science and Computational Intelligence*, 8(4), 29–42. (Impact Factor: 2.4)

PEER-REVIEWED ARTICLE (JAPANESE)

1. 大和田, 勇人, & Niken P. Martono. (2024). スマート農業〈2〉画像解析による乳牛の飼養管理 [Smart agriculture (2): Advancing dairy farm management through image analysis]. 映像情報メディア学会誌, 78(6), 608 – 613. IF: 0.5.

PEER-REVIEWED PROCEEDINGS (ENGLISH)

1. Domain-Specific Retrieval for Retrieval-Augmented Generation: A Case Study on Pertussis Research (Student Abstract). Hiroki Takabatake, Martono, N. P., Asaomi Kuwae, Toshihiko Iuchi, Hayato Ohwada. *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI 2026).*
2. Martono, N. P., Daud, A. R., & Ohwada, H. (2025, August). A Comparative Study of Deep Learning Models for In-House Cattles' Behavior Prediction. In *Intelligent Systems Conference* (pp. 419–432). Springer Nature Switzerland.
3. Martono, N. P., Osawa, S., Igarashi, Y., Matsuo, Y., Ohwada, H., & Yokobori, S. (2025, July). Improving Vancomycin Trough Level Prediction with Machine Learning: A Comparative Study of Feature Selection and Model Performance. In *Proceedings of the 47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)* (pp. 1–4). IEEE.
4. Matsuo, Y., Fujimura, S., Koshiba, T., Kudo, G., Takeshita, K., Kazama, M., Martono, N. P., & Ishibashi, T. (2025, July). Development of an Optimal Flow Diverter Stent Prediction Model Based on Parent Artery Morphology Analysis. In *Proceedings of the IEEE Engineering in Medicine and Biology Society Annual International Conference*. IEEE.
5. Martono, N. P., & Ohwada, H. (2025). A Framework for Supporting Non-Native English Speakers in Programming Education. In *Proceedings of the 13th International Conference on Information and Education Technology (ICIET)*. IEEE. (Ahead of print)
6. Martono, N. P., & Ohwada, H. (2025, February). Learning Programming for Non-Native English-Speaking Students: Insight from Japanese Students. In *Proceedings of the 56th ACM Technical Symposium on Computer Science Education (SIGCSE)*, Vol. 2 (pp. 1539–1540).
7. Kawauchi, T., Fujimura, S., Koshiba, T., Kudo, G., Martono, N. P., Sano, T., Fuga, M., Nagayama, G., Kan, I., Kato, N., Ishibashi, T., Murayama, Y., & Ohwada, H. (2025, January). Application of Machine Learning in Preoperative Prediction of Coil Preference in Cerebral Aneurysm Treatment. In *Proceedings of the 30th International Symposium on Artificial Life and Robotics (AROB 2025)* (pp. 284–289).
8. Tsukamoto, R., Martono, N. P., & Ohwada, H. (2024, December). Optimized Dairy Cow Identification and Tracking with PTZ Camera Technology. In *2024 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)* (pp. 571–575). IEEE.
9. Shiotsu, H., Martono, N. P., & Ohwada, H. (2024, December). Applicability of Machine Learning to Improve Mastitis Prediction in Livestock. In *2024 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)* (pp. 1149–1153). IEEE.
10. Kitano, S., Ebihara, A., Sawada, T., Martono, N. P., & Ohwada, H. (2024, November). Precision 3D Motion Capture Using Pose Estimation Techniques: Application in Sports Video Analysis. In *Principle and Practice of Data and Knowledge Acquisition Workshop* (pp. 214–225). Springer Nature Singapore.

11. Koshiba, T., Sudo, C., Ogawa, T., Iuchi, T., Martono, N. P., Kuwae, A., & Ohwada, H. (2024). Predicting Protein Interactions with BteA in *Bordetella pertussis* Pathogenesis Using Machine Learning. In *Proceedings of the 8th International Conference on Computational Biology and Bioinformatics (ICCBB 2024)* (pp. 42–47). ACM.

12. Martono, N. P., & Ohwada, H. (2024, September). Agent-Based Modeling of Vaccine Hesitancy: Exploring the Role of Trust, Policy, and Socioeconomic Factors. In *Intelligent Systems Conference (IntelliSys 2024)* (pp. 253–266). Springer.

13. Koshiba, T., Fujimura, S., Kudo, G., Takeshita, K., Kazama, M., Kanebayashi, H., Martono, N. P., & Ohwada, H. (2024, July). Optimizing Coil Selection for Cerebral Aneurysm Treatment Using PyRadiomics and Machine Learning Models. In *Proceedings of the 46th IEEE EMBS Conference (EMBC 2024)* (pp. 1–4).

14. Martono, N. P., Sawado, R., Nonaka, I., Terada, F., & Ohwada, H. (2023, November). Automated Cattle Behavior Classification Using Wearable Sensors and Machine Learning Approach. In *Pacific Rim Knowledge Acquisition Workshop* (pp. 58–69). Springer Nature Singapore.

15. Martono, N. P., Kuramaru, S., Igarashi, Y., Yokobori, S., & Ohwada, H. (2023, October). Blood Alcohol Concentration Screening at Emergency Room: Designing a Classification Model Using Machine Learning. In *2023 14th International Conference on Information & Communication Technology and System (ICTS)* (pp. 255–260). IEEE.

16. Sawada, T., Uchino, T., Martono, N. P., & Ohwada, H. Efficient Estimation of Cow' s Location Using Machine Learning Based on Sensor Data. In *International Conference on Artificial Intelligence for Communications and Networks* (pp. 86–94). Springer.

17. Martono, N. P., Nishiguchi, T., & Ohwada, H. ECG Signal Classification Using Recurrence Plot-Based Approach and Deep Learning for Arrhythmia Prediction. In *Asian Conference on Intelligent Information and Database Systems* (pp. 327–335). Springer.

18. Martono, N. P., & Ohwada, H. Financial Distress Model Prediction Using Machine Learning: A Case Study on Indonesia' s Consumer Cyclical Companies. In *Joint European Conference on Machine Learning and Knowledge Discovery in Databases* (pp. 53–61). Springer.

19. Martono, N. P., Nishiguchi, T., & Ohwada, H. (2022, December). Interpreting Arrhythmia Classification Using Deep Neural Networks and CAM-Based Approach. In *Proceedings of the 6th International Conference on Computational Biology and Bioinformatics* (pp. 35–40).

20. Martono, N. P., Yamaguchi, T., & Ohwada, H. (2017, July). Early Diagnosis of Mild Cognitive Impairment: A Case Study in Approaches to Inductive Logic Programming. In *2017 IEEE International Conference on Cognitive Informatics & Cognitive Computing (ICCI*CC)* (pp. 262–267). IEEE.

21. Martono, N. P., Kanamori, K., & Ohwada, H. (2014). Utilizing Customers' Purchase and Contract Renewal Details to Predict Defection in the Cloud Software

Industry. In *Pacific Rim Knowledge Acquisition Workshop (PKAW 2014)* (pp. 138–149). Springer.

22. Siallagan, M., Martono, N. P., & Putro, U. S. (2017, May). Agent-Based Simulations of Smallholder Decision-Making in Land Use Change/Cover Problems. In *Agent-Based Approaches in Economics and Social Complex Systems IX* (pp. 97–107). Springer.
23. Martono, N. P., Yamaguchi, T., & Ohwada, H. (2016, August). Utilizing Finger Movement Data to Cluster Patients with Everyday Action Impairment. In *2016 IEEE International Conference on Cognitive Informatics & Cognitive Computing (ICCI*CC)* (pp. 459–464). IEEE.
24. Hayashi, S., Prasasti, N., Kanamori, K., & Ohwada, H. (2016). Improving Behavior Prediction Accuracy Using Machine Learning for Agent-Based Simulation. In *Asian Conference on Intelligent Information and Database Systems (ACIIDS 2016)* (pp. 280–289). Springer.
25. Prasasti, N., & Ohwada, H. (2014, May). Applicability of Machine-Learning Techniques in Predicting Customer Defection. In *2014 International Symposium on Technology Management and Emerging Technologies* (pp. 157–162). IEEE.
26. Prasasti, N., Okada, M., Kanamori, K., & Ohwada, H. (2014). Customer Lifetime Value and Defection Possibility Prediction Using Machine Learning. In *Asian Conference on Intelligent Information and Database Systems (ACIIDS 2014)* (pp. 62–71). Springer.

BOOK CHAPTERS (ENGLISH)

1. Martono, N. P., Yamaguchi, T., Maeta, T., Fujino, H., Kubota, Y., Ohwada, H., & Giovannetti, T. (2018). Clustering Finger Motion Data from Virtual Reality-Based Training to Analyze Patients with Mild Cognitive Impairment. In *Virtual and Augmented Reality* (pp. 1343–1358).

ORAL PRESENTATIONS (ENGLISH)

1. Grassland Recommendation Support Using Sentinel-2: A Preliminary Study. Niken P. Martono. 7th International Conference on Intelligent Autonomous Systems (ICoIAS' 2025), Osaka, Japan.
2. Improving Retrieval-Augmented Generation for Medical Literature: A Case Study on Pertussis Research. Hiroki Takabatake, Niken P. Martono. *15th International Conference on Information, Communication Technology and System (ICTS) 2025. Bali, Indonesia.*
3. Non-Invasive Foaling Prediction in Horses Using Pose Estimation and Machine Learning. Koyo Uratani, Niken P. Martono. *15th International Conference on Information, Communication Technology and System (ICTS) 2025. Bali, Indonesia.*
4. Feasibility of RGB-Camera-Based 3D Ground Reaction Force Prediction Using Pose Estimation. Akimasa Ebihara, Niken P. Martono. *15th International Conference on Information, Communication Technology and System (ICTS) 2025. Bali, Indonesia.*
5. Preliminary Study on Video- and Machine-Learning-Based Power Estimation in Road Cycling. Shoichiro Imanishi, Niken P. Martono. *15th International Con-*

ference on Information, Communication Technology and System (ICTS) 2025. Bali, Indonesia.

6. A Comparative Study of Deep Learning Models for In-House Cattles' Behavior Prediction. Niken P. Martono. *Intelligent Systems Conference (IntelliSys 2025)*, Amsterdam, The Netherlands. (Accepted for presentation)
7. Improving Vancomycin Trough Level Prediction with Machine Learning: A Comparative Study of Feature Selection and Model Performance. Niken P. Martono. *47th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Copenhagen, Denmark. (Accepted for presentation)
8. A Framework for Supporting Non-Native English Speakers in Programming Education. Niken P. Martono. *13th International Conference on Information and Education Technology (ICIET)*, Fukuyama, Japan.
9. Application of Machine Learning in Preoperative Prediction of Coil Preference in Cerebral Aneurysm Treatment. Takumi Kawauchi. *30th International Symposium on Artificial Life and Robotics (AROB 2025)*, Beppu, Japan.
10. Optimized Dairy Cow Identification and Tracking with PTZ Camera Technology. Hiroaki Shiotsu. *2024 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Bangkok, Thailand.
11. Applicability of Machine Learning to Improve Mastitis Prediction in Livestock. Ryota Tsukamoto. *2024 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Bangkok, Thailand.
12. End-to-End Deep Learning System for Automated Detection and First Coil Prediction in Coil Embolization of Cerebral Aneurysms. Toshiki Koshiba. *20th Interdisciplinary Cerebrovascular Symposium*, United States.
13. Precision 3D Motion Capture Using Pose Estimation Techniques: Application in Sports Video Analysis. Niken P. Martono. *Principle and Practice of Data and Knowledge Acquisition Workshop (PKAW)*, Kyoto, Japan.
14. Predicting Protein Interactions with BteA in *Bordetella pertussis* Pathogenesis Using Machine Learning. Toshiki Koshiba. *8th International Conference on Computational Biology and Bioinformatics*, Kyoto, Japan.
15. Machine Learning Can Predict Optimal First Coil for Aneurysm Embolization. Toshiki Koshiba. *WFITN 2024 – 17th Congress of the World Federation of Interventional and Therapeutic Neuroradiology*, United States.
16. Agent-Based Modeling of Vaccine Hesitancy: Exploring the Role of Trust, Policy, and Socioeconomic Factors. Niken P. Martono. *Intelligent Systems Conference*, Amsterdam, The Netherlands.
17. Optimizing Coil Selection for Cerebral Aneurysm Treatment Using PyRadiomics and Machine Learning Models. Toshiki Koshiba. *46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Orlando, United States.
18. Development of a Machine Learning Model Predicting Framing Coils for Coil Embolization of Cerebral Aneurysms. Shoichiro Fujimura. *46th Annual Inter-*

national Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2024), Orlando, United States.

19. Automated Cattle Behavior Classification Using Wearable Sensors and Machine Learning Approach. Niken P. Martono. *Pacific Rim Knowledge Acquisition Workshop (PKAW)*, Online.

20. Blood Alcohol Concentration Screening at Emergency Room: Designing a Classification Model Using Machine Learning. Niken P. Martono. *14th International Conference on Information & Communication Technology and System (ICTS)*, Surabaya, Indonesia.

21. Leveraging Natural Language Processing to Automatically Extract Key Story Elements in Japanese Television Dramas. Niken P. Martono. *IEEE 22nd International Conference on Cognitive Informatics and Cognitive Computing (ICCI*CC 2023)*, Stanford, United States.

22. XAI-Based Decision-Making Support Tool for Selecting the Initial Coil in Cerebral Aneurysm Treatment. Niken P. Martono. *IEEE 22nd International Conference on Cognitive Informatics and Cognitive Computing (ICCI*CC 2023)*, Stanford, United States.

23. Development of a Real-Time Automatic Water Break Detection System in Mares Using Image Recognition. Tom Uchino. *28th International Symposium on Artificial Life and Robotics*, Beppu, Japan.

24. Efficient Estimation of Cow' s Location Using Machine Learning Based on Sensor Data. Tomohide Sawada. *International Conference on Artificial Intelligence for Communications and Networks*, Hiroshima, Japan.

25. ECG Signal Classification Using Recurrence Plot-Based Approach and Deep Learning for Arrhythmia Prediction. Niken P. Martono. *Asian Conference on Intelligent Information and Database Systems*, Online.

26. Financial Distress Model Prediction Using Machine Learning: A Case Study of Indonesia' s Consumer Cyclical Companies. Niken P. Martono. *European Conference on Machine Learning and Knowledge Discovery in Databases*, Online.

27. Interpreting Arrhythmia Classification Using Deep Neural Networks and CAM-Based Approach. Niken P. Martono. *6th International Conference on Computational Biology and Bioinformatics*, Online.

28. Early Diagnosis of Mild Cognitive Impairment: A Case Study in Approaches to Inductive Logic Programming. Niken P. Martono. *IEEE 16th International Conference on Cognitive Informatics & Cognitive Computing (ICCI*CC)*, Oxford, United Kingdom.

29. Feature Extraction Based on Touch Interaction Data in Virtual Reality-Based IADL for Characterization of Mild Cognitive Impairment. Yuki Kubota. *VISIGRAPP 2017 (HUCAPP)*, pp. 152–157.

30. Discovering Rules of Subtle Deficits Indicating Mild Cognitive Impairment Using Inductive Logic Programming. Niken P. Martono. *19th International Conference on Human-Computer Interaction (HCI International 2017)*, Vancouver, Canada.

31. Generating Rules of Action Transition Errors in Daily Activities from Virtual Reality-Based Training Data. Keisuke Abe. *19th International Conference on Human-Computer Interaction (HCI International 2017)*, Vancouver, Canada.
32. Utilizing Finger Movement Data to Cluster Patients with Everyday Action Impairment. Niken P. Martono. *2016 IEEE International Conference on Cognitive Informatics & Cognitive Computing (ICCI*CC)*, Stanford, United States.
33. Improving Behavior Prediction Accuracy Using Machine Learning for Agent-Based Simulation. Shinji Hayashi. *8th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2016)*, Da Nang, Vietnam.
34. Agent-Based Simulations of Smallholder Decision-Making in Land Use Change/Cover Problems: A Case Study of Agricultural Land Conversion in Jambi Province, Indonesia. Niken P. Martono. *AESCS International Workshop 2015*, Indonesia.
35. Applicability of Machine-Learning Techniques in Predicting Customer Defection. Niken P. Martono. *International Symposium on Technology Management and Emerging Technologies*, Indonesia.
36. Utilizing Customers' Purchase and Contract Renewal Details to Predict Defection in the Cloud Software Industry. Niken P. Martono. *13th Pacific Rim Knowledge Acquisition Workshop (PKAW 2014)*, Gold Coast, Australia.
37. Customer Lifetime Value and Defection Possibility Prediction Model Using Machine Learning: An Application to a Cloud-Based Software Company. Niken P. Martono. *6th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2014)*, Bangkok, Thailand.

POSTER PRESENTATION (ENGLISH)

1. Low-Cost Deep Learning Framework for Indoor Localization of Dairy Cows. Niken P. Martono. *International Conference on Research in Emerging Technologies and Strategic Business & The 10th International Seminar and Conference on Learning Organisation (ICRES–ISCLO).*
2. Improving the Estimation Accuracy of a Pose Estimation Model Using Time-Series Data Correction with the K-Nearest Neighbors Method. Tomoki Sasaki, Niken P. Martono, Yasushi Kariyama, Toshihiko Iuchi, Shinichiro Tani, Hayato Ohwada. *15th International Symposium on Computer Science in Sport (IACSS 2025).*
3. Classification and Evaluation of Road Bike Riding Posture Using Pose Estimation. Ryoya Hirasaki, Toshihiko Iuchi, Niken P. Martono, Hayato Ohwada. *15th International Symposium on Computer Science in Sport (IACSS 2025).*
4. Comparative Analysis of Willingness to Pay and Adoption in Motorcycle EV Battery Swapping and Car EV Charging Services in Indonesia. Niken P. Martono. *Transportation Research Symposium, Rotterdam, The Netherlands.*
5. Learning Programming for Non-Native English-Speaking Students: Insights from Japanese Students. Niken P. Martono. *56th ACM Technical Symposium on Computer Science Education (SIGCSE), Pittsburgh, USA.*
6. A Machine Learning-Driven Approach to Predict Mechanical Degradation in Fiber-Reinforced Composite Laminates Associated with Matrix Cracks. Shinji

Ogihara, M. Fikry, Niken P. Martono. *49th International Conference and Exposition on Advanced Ceramics and Composites, USA.*

POSTER PRESENTATION (JAPANESE)

1. ルールベースによる脳動脈瘤ネック面の自動算出及び 1st コイル予測モデルの構築 上島悠暉，藤村宗一郎，Niken P. Martono. 第 *41* 回日本脳神経血管内治療学会学術集会.
2. 母血管形状解析に基づく Flow Diverter Stent の最適サイズ・長さ予測モデルの開発松尾倭斗，藤村宗一郎，Niken P. Martono. 第 *41* 回日本脳神経血管内治療学会学術集会.
3. 脳動脈瘤の形態情報に基づくコイル塞栓術における必要コイルの術前予測吉田直生，藤村宗一郎，竹下康平，大原啓一郎，工藤元樹，Niken P. Martono. 第 *41* 回日本脳神経血管内治療学会学術集会.
4. 深層学習による脳動脈瘤の自動検知およびコイル塞栓術の 1st Coil 予測モデル構築 小柴稔輝, Niken P. Martono. 第 *40* 回日本脳神経血管内治療学会学術集会（*JSNET 2024*），京都.
5. 機械学習を用いた Flow Diverter Stent 留置術における最適なステントサイズ予測モデルの開発松尾倭斗, Niken P. Martono. 第 *40* 回日本脳神経血管内治療学会学術集会（*JSNET 2024*），京都.
6. ホルスタイン種泌乳牛における予測受胎率と周産期の健康および生殖器状態ならびに発情前後の卵巣ホルモン動態との関連性柏原啓人. 日本獣医学会学術集会講演要旨集，第 *167* 回，*2024* 年.
7. 機械学習を用いた脳動脈瘤コイル塞栓術における最適コイル予測モデルの構築第 *40* 回日本脳神経血管内治療学会学術集会（*JSNET 2023*），京都.

RESEARCH GRANT (PI)

一般財団法人リモート・センシング技術センター (RESTEC)
Research Grant, PI, July 2025 - March 2026,
Research Title:「小規模酪農家のための低コスト草地推薦支援システムの構築：Sentinel-2 と分類モデルを用いた実証研究

Hirose Foundation (公益財団法人ヒロセ財団)
Research Grant, PI, December 2023 - March 2025,
Research Title:「小規模酪農家向け定是的および定性的データを統合した AI 主導型スマート管理システムの開発の研究」

RESEARCH GRANT (Co-I)

Tokyo University of Science
Research Grant, Co-I, April 2025 - March 2027,
Research Title:「複合材料工学 × 機械学習の融合：損傷挙動と力学的特性低下の　可視化」

Japan Racing Association, JRA (joint research with Osaka Metropolitan University)
Research Grant, Co-I, April 2023 - March 2026,
Research Title:「受胎率予測による乳牛繁殖管理技術開発事業」

Japan Racing Association, JRA (joint research with Kagoshima University)
Research Grant, Co-I, April 2022 - March 2024,
Research Title:「競走馬生産における AI(人工知能) を用いた馬の分娩予測 (陣痛検知) に関する研究」