

References

- [1] R. Buyya, *High Performance Cluster Computing: architectures and systems*. Pearson Education India, 1999, vol. 2.
- [2] Z. Zhou, X. Chen, E. Li, L. Zeng, K. Luo, and J. Zhang, “Edge intelligence: Paving the last mile of artificial intelligence with edge computing,” *Proceedings of the IEEE*, 2019, vol. 107, no. 8, pp. 1738–1762.
- [3] R. Peinl, F. Holzschuher, and F. Pfitzer, “Docker cluster management for the cloud-survey results and own solution,” *Journal of Grid Computing*, 2016, vol. 14, no. 2, pp. 265–282.
- [4] D. Reis, B. Piedade, F. F. Correia, J. P. Dias, and A. Aguiar, “Developing docker and docker-compose specifications: A developers’ survey,” *Ieee Access*, 2021, vol. 10, pp. 2318–2329.
- [5] M. Alam, J. Rufino, J. Ferreira, S. H. Ahmed, N. Shah, and Y. Chen, “Orchestration of microservices for iot using docker and edge computing,” *IEEE Communications Magazine*, 2018, vol. 56, no. 9, pp. 118–123.
- [6] P. Dziurzanski, S. Zhao, M. Przewozniczek, M. Komarnicki, and L. S. Indrusiak, “Scalable distributed evolutionary algorithm orchestration using docker containers,” *Journal of Computational Science*, 2020, vol. 40, p. 101069.
- [7] L. U. Khan, W. Saad, Z. Han, E. Hossain, and C. S. Hong, “Federated learning for internet of things: Recent advances, taxonomy, and open challenges,” *IEEE Communications Surveys & Tutorials*, 2021, vol. 23, no. 3, pp. 1759–1799.
- [8] C. Ma, J. Li, M. Ding, H. H. Yang, F. Shu, T. Q. Quek, and H. V. Poor, “On safeguarding privacy and security in the framework of federated learning,” *IEEE network*, 2020, vol. 34, no. 4, pp. 242–248.

- [9] N. G. Bachiega, P. S. Souza, S. M. Bruschi, and S. D. R. De Souza, "Container-based performance evaluation: A survey and challenges," in *2018 IEEE International Conference on Cloud Engineering (IC2E)*. IEEE, 2018, pp. 398–403.
- [10] V. Struhár, M. Behnam, M. Ashjaei, and A. V. Papadopoulos, "Real-time containers: A survey," in *2nd Workshop on Fog Computing and the IoT (Fog-IoT 2020)*. Schloss Dagstuhl-Leibniz-Zentrum für Informatik, 2020.
- [11] A. Islam, A. Debnath, M. Ghose, and S. Chakraborty, "A survey on task offloading in multi-access edge computing," *Journal of Systems Architecture*, 2021, vol. 118, p. 102225.
- [12] Q. Zhang, L. Liu, C. Pu, Q. Dou, L. Wu, and W. Zhou, "A comparative study of containers and virtual machines in big data environment," in *2018 IEEE 11th International Conference on Cloud Computing (CLOUD)*. IEEE, 2018, pp. 178–185.
- [13] R. Morabito, V. Cozzolino, A. Y. Ding, N. Beijar, and J. Ott, "Consolidate iot edge computing with lightweight virtualization," *IEEE network*, 2018, vol. 32, no. 1, pp. 102–111.
- [14] R. Morabito, I. Farris, A. Iera, and T. Taleb, "Evaluating performance of containerized iot services for clustered devices at the network edge," *IEEE Internet of Things Journal*, 2017, vol. 4, no. 4, pp. 1019–1030.
- [15] P. Raj, A. Raman, P. Raj, and A. Raman, "Automated multi-cloud operations and container orchestration," *Software-Defined Cloud Centers: Operational and Management Technologies and Tools*, 2018, pp. 185–218.
- [16] M. A. Serhani, H. T. El-Kassabi, K. Shuaib, A. N. Navaz, B. Benatallah, and A. Beheshti, "Self-adapting cloud services orchestration for fulfilling intensive sensory data-driven iot workflows," *Future Generation Computer Systems*, 2020, vol. 108, pp. 583–597.
- [17] J. Okwuibe, J. Haavisto, E. Harjula, I. Ahmad, and M. Ylianttila, "Sdn enhanced resource orchestration of containerized edge applications for industrial iot," *IEEE Access*, 2020, vol. 8, pp. 229 117–229 131.
- [18] S.-L. Wamba-Taguimdje, S. Fosso Wamba, J. R. Kala Kamdjoug, and C. E. Tchatchouang Wanko, "Influence of artificial intelligence (ai) on firm perfor-

- mance: the business value of ai-based transformation projects,” *Business Process Management Journal*, 2020, vol. 26, no. 7, pp. 1893–1924.
- [19] F. Firouzi, B. Farahani, M. Barzegari, and M. Daneshmand, “Ai-driven data monetization: The other face of data in iot-based smart and connected health,” *IEEE Internet of Things Journal*, 2020, vol. 9, no. 8, pp. 5581–5599.
- [20] S. K. Jagatheesaperumal, M. Rahouti, K. Ahmad, A. Al-Fuqaha, and M. Guizani, “The duo of artificial intelligence and big data for industry 4.0: Applications, techniques, challenges, and future research directions,” *IEEE Internet of Things Journal*, 2021, vol. 9, no. 15, pp. 12 861–12 885.
- [21] M. Pardo and G. Sberveglieri, “Learning from data: A tutorial with emphasis on modern pattern recognition methods,” *IEEE Sensors Journal*, 2002, vol. 2, no. 3, pp. 203–217.
- [22] B. N. Narayanan, O. Djaneye-Boundjou, and T. M. Kebede, “Performance analysis of machine learning and pattern recognition algorithms for malware classification,” in *2016 IEEE national aerospace and electronics conference (NAECON) and ohio innovation summit (OIS)*. IEEE, 2016, pp. 338–342.
- [23] R. A. Khalil, N. Saeed, M. Masood, Y. M. Fard, M.-S. Alouini, and T. Y. Al-Naffouri, “Deep learning in the industrial internet of things: Potentials, challenges, and emerging applications,” *IEEE Internet of Things Journal*, 2021, vol. 8, no. 14, pp. 11 016–11 040.
- [24] I. D. Mienye and Y. Sun, “A survey of ensemble learning: Concepts, algorithms, applications, and prospects,” *IEEE Access*, 2022, vol. 10, pp. 99 129–99 149.
- [25] K. B. Johnson, W.-Q. Wei, D. Weeraratne, M. E. Frisse, K. Misulis, K. Rhee, J. Zhao, and J. L. Snowdon, “Precision medicine, ai, and the future of personalized health care,” *Clinical and translational science*, 2021, vol. 14, no. 1, pp. 86–93.
- [26] K. H. Abdulkareem, M. A. Mohammed, S. S. Gunasekaran, M. N. Al-Mhiqani, A. A. Mutlag, S. A. Mostafa, N. S. Ali, and D. A. Ibrahim, “A review of fog computing and machine learning: concepts, applications, challenges, and open issues,” *Ieee Access*, 2019, vol. 7, pp. 153 123–153 140.
- [27] S. Roy, C. Ellis, S. Shiva, D. Dasgupta, V. Shandilya, and Q. Wu, “A survey of game theory as applied to network security,” in *2010 43rd Hawaii International Conference on System Sciences*. IEEE, 2010, pp. 1–10.

- [28] R. Machado and S. Tekinay, “A survey of game-theoretic approaches in wireless sensor networks,” *Computer networks*, 2008, vol. 52, no. 16, pp. 3047–3061.
- [29] G. Mateescu, W. Gentsch, and C. J. Ribbens, “Hybrid computing—where hpc meets grid and cloud computing,” *Future Generation Computer Systems*, 2011, vol. 27, no. 5, pp. 440–453.
- [30] C. A. Navarro, N. Hitschfeld-Kahler, and L. Mateu, “A survey on parallel computing and its applications in data-parallel problems using gpu architectures,” *Communications in Computational Physics*, 2014, vol. 15, no. 2, pp. 285–329.
- [31] B. M. Maggs, L. R. Matheson, and R. E. Tarjan, “Models of parallel computation: A survey and synthesis,” in *Proceedings of the Twenty-Eighth Annual Hawaii International Conference on System Sciences*, vol. 2. IEEE, 1995, pp. 61–70.
- [32] H. El-Sayed, S. Sankar, M. Prasad, D. Puthal, A. Gupta, M. Mohanty, and C.-T. Lin, “Edge of things: The big picture on the integration of edge, iot and the cloud in a distributed computing environment,” *IEEE Access*, 2017, vol. 6, pp. 1706–1717.
- [33] X. Xu, “From cloud computing to cloud manufacturing,” *Robotics and computer-integrated manufacturing*, 2012, vol. 28, no. 1, pp. 75–86.
- [34] S. Varrette, P. Bouvry, H. Cartiaux, and F. Georgatos, “Management of an academic hpc cluster: The ul experience,” in *2014 International Conference on High Performance Computing & Simulation (HPCS)*. IEEE, 2014, pp. 959–967.
- [35] H. Hussain, S. U. R. Malik, A. Hameed, S. U. Khan, G. Bickler, N. Min-Allah, M. B. Qureshi, L. Zhang, W. Yongji, N. Ghani *et al.*, “A survey on resource allocation in high performance distributed computing systems,” *Parallel Computing*, 2013, vol. 39, no. 11, pp. 709–736.
- [36] P. Krishnan, K. Jain, K. Achuthan, and R. Buyya, “Software-defined security-by-contract for blockchain-enabled mud-aware industrial iot edge networks,” *IEEE Transactions on Industrial Informatics*, 2021, pp. 1–1, doi:10.1109/TII.2021.3084341.
- [37] W. Gong, W. Zhang, M. Bilal, Y. Chen, X. Xu, and W. Wang, “Efficient web apis recommendation with privacy-preservation for mobile app development in industry 4.0,” *IEEE Transactions on Industrial Informatics*, 2021, pp. 1–1, doi:10.1109/TII.2021.3133614.

- [38] Understanding Virtualization for Industrial Automation: Mike Fahrion, 2021. [Online]. Available: <https://www.automationworld.com/factory/iiot/article/21197331/>
- [39] W. Liang, Y. Fan, K.-C. Li, D. Zhang, and J.-L. Gaudiot, “Secure data storage and recovery in industrial blockchain network environments,” *IEEE Transactions on Industrial Informatics*, 2020, vol. 16, no. 10, pp. 6543–6552.
- [40] M. Sollfrank, F. Loch, S. Denteneer, and B. Vogel-Heuser, “Evaluating docker for lightweight virtualization of distributed and time-sensitive applications in industrial automation,” *IEEE Transactions on Industrial Informatics*, 2021, vol. 17, no. 5, pp. 3566–3576.
- [41] Y. Wang, Q. Wang, X. Chen, D. Chen, X. Fang, M. Yin, and N. Zhang, “Containerguard: A real-time attack detection system in container-based big data platform,” *IEEE Transactions on Industrial Informatics*, 2020, pp. 1–1, doi:10.1109/TII.2020.3047416.
- [42] W. Wang, H. Xu, M. Alazab, T. R. Gadekallu, Z. Han, and C. Su, “Blockchain-based reliable and efficient certificateless signature for iiot devices,” *IEEE Transactions on Industrial Informatics*, 2021, pp. 1–1, doi:10.1109/TII.2021.3084753.
- [43] W. Wang, C. Qiu, Z. Yin, G. Srivastava, T. R. Gadekallu, F. Alsolami, and C. Su, “Blockchain and puf-based lightweight authentication protocol for wireless medical sensor networks,” *IEEE Internet of Things Journal*, 2021, pp. 1–1, doi:10.1109/JIOT.2021.3117762.
- [44] D. Liu, Y. Zhang, W. Wang, K. Dev, and S. A. Khowaja, “Flexible data integrity checking with original data recovery in iot-enabled maritime transportation systems,” *IEEE Transactions on Intelligent Transportation Systems*, 2021, pp. 1–12, doi:10.1109/TITS.2021.3125070.
- [45] F. Loukidis-Andreou, I. Giannakopoulos, K. Doka, and N. Koziris, “Docker-sec: A fully automated container security enhancement mechanism,” in *Proc. IEEE ICDCS*, 2018, pp. 1561–1564.
- [46] Y. Sun, D. Safford, M. Zohar, D. Pendarakis, Z. Gu, and T. Jaeger, “Security namespace: making linux security frameworks available to containers,” in *Proc. USENIX*, 2018, pp. 1423–1439.

- [47] L. Cui, Z. Chen, S. Yang, Z. Ming, Q. Li, Y. Zhou, S. Chen, and Q. Lu, “A blockchain-based containerized edge computing platform for the internet of vehicles,” *IEEE Internet of Things Journal*, 2021, vol. 8, no. 4, pp. 2395–2408.
- [48] S. Hosseinzadeh, S. Laurén, and V. Leppänen, “Security in container-based virtualization through vtpm,” in *Proc. ACM UCC*, 2016, pp. 214–219.
- [49] L. Catuogno and C. Galdi, “On the evaluation of security properties of containerized systems,” in *Proc. IEEE IUCC-CSS*, 2016, pp. 69–76.
- [50] Y. Lin, O. Tunde-Onadele, and X. Gu, “Cdl: Classified distributed learning for detecting security attacks in containerized applications,” in *Proc. ACM ACSAC*, 2020, pp. 179–188.
- [51] Y. Zheng, W. Dong, and J. Zhao, “Zerodvs: Trace-ability and security detection of container image based on inheritance graph,” in *Proc. IEEE CSP*, 2021, pp. 186–192.
- [52] A. Zerouali, T. Mens, G. Robles, and J. M. Gonzalez-Barahona, “On the relation between outdated docker containers, severity vulnerabilities, and bugs,” in *Proc. IEEE SANER*, 2019, pp. 491–501.
- [53] Y. Mao, J. Oak, A. Pompili, D. Beer, T. Han, and P. Hu, “Draps: Dynamic and resource-aware placement scheme for docker containers in a heterogeneous cluster,” in *Proc. IEEE IPCCC*, 2017, pp. 1–8.
- [54] M. Niu, B. Cheng, Y. Feng, and J. Chen, “Gmta: A geo-aware multi-agent task allocation approach for scientific workflows in container-based cloud,” *IEEE Transactions on Network and Service Management*, 2020, vol. 17, no. 3, pp. 1568–1581.
- [55] R. Morabito, I. Farris, A. Iera, and T. Taleb, “Evaluating performance of containerized iot services for clustered devices at the network edge,” *IEEE Internet of Things Journal*, 2017, vol. 4, no. 4, pp. 1019–1030.
- [56] X. Huang, R. Yu, S. Xie, and Y. Zhang, “Task-container matching game for computation offloading in vehicular edge computing and networks,” *IEEE Transactions on Intelligent Transportation Systems*, 2020, pp. 1–14, doi: 10.1109/TITS.2020.2990462.
- [57] A. Abouaomar, S. Cherkaoui, Z. Mlika, and A. Kobbane, “Resource provisioning in edge computing for latency sensitive applications,” *IEEE Internet of Things Journal*, 2021, pp. 1–1, doi: 10.1109/JIOT.2021.3052082.

- [58] J. Zhang, X. Zhou, T. Ge, X. Wang, and T. Hwang, "Joint task scheduling and containerizing for efficient edge computing," *IEEE Transactions on Parallel and Distributed Systems*, 2021, vol. 32, no. 8, pp. 2086–2100.
- [59] D. L. S. H. Taub, *Principles of Communication Systems*. McGraw-Hill press New York, 1986.
- [60] X.-F. Xu, D.-Z. Feng, and W. X. Zheng, "A fast algorithm for nonunitary joint diagonalization and its application to blind source separation," *IEEE Transactions on Signal Processing*, 2011, vol. 59, no. 7, pp. 3457–3463.
- [61] R. Mishra, A. Gupta, H. P. Gupta, and T. Dutta, "A sensors based deep learning model for unseen locomotion mode identification using multiple semantic matrices," *IEEE Transactions on Mobile Computing*, 2020, pp. 1–1, doi: 10.1109/TMC.2020.3015546.
- [62] Water-to-Cloud, 2021. [Online]. Available: <http://thoreau.uchicago.edu/>
- [63] Yong Zhang, Junjie Li, Yaohua Guo, "Vehicle driving behavior," 2021. [Online]. Available: <http://dx.doi.org/10.21227/qzf7-sj04>
- [64] Yuksel, Asim Sinan, Atmaca, Şerafettin, "Driver Behavior Dataset," 2021. [Online]. Available: <http://dx.doi.org/10.17632/jj3tw8kj6h.2>
- [65] G. Manogaran, M. Alazab, H. Song, and N. Kumar, "Cdp-ua: Cognitive data processing method wearable sensor data uncertainty analysis in the internet of things assisted smart medical healthcare systems," *IEEE Journal of Biomedical and Health Informatics*, 2021, vol. 25, no. 10, pp. 3691–3699.
- [66] S. Yao, Y. Zhao, H. Shao, S. Liu, D. Liu, L. Su, and T. Abdelzaher, "Fastdeepiot: Towards understanding and optimizing neural network execution time on mobile and embedded devices," in *Proc. ACM Sensys*, 2018, pp. 278–291.
- [67] A. Chaudhary, H. P. Gupta, K. K. Shukla, and T. Dutta, "Sensor signals-based early dementia detection system using travel pattern classification," *IEEE Sensors Journal*, 2020, vol. 20, no. 23, pp. 14 474–14 481.
- [68] R. Mishra, H. P. Gupta, and T. Dutta, "Analysis, modeling, and representation of covid-19 spread: A case study on india," *IEEE Transactions on Computational Social Systems*, 2021, vol. 8, no. 4, pp. 964–973.

- [69] S. Yao, Y. Zhao, A. Zhang, L. Su, and T. Abdelzaher, “Deepiot: Compressing deep neural network structures for sensing systems with a compressor-critic framework,” in *Proc. ACM Sensys*, 2017, pp. 1–14.
- [70] E. Sannara, F. PORTET, P. LALANDA, and V. German, “A federated learning aggregation algorithm for pervasive computing: Evaluation and comparison,” in *Proc. IEEE PerCom*, 2021, pp. 1–10.
- [71] M. Hao, H. Li, X. Luo, G. Xu, H. Yang, and S. Liu, “Efficient and privacy-enhanced federated learning for industrial artificial intelligence,” *IEEE Transactions on Industrial Informatics*, 2020, vol. 16, no. 10, pp. 6532–6542.
- [72] W. Cheng, Y. Zou, J. Xu, and W. Liu, “Dynamic games for social model training service market via federated learning approach,” *IEEE Transactions on Computational Social Systems*, 2022, vol. 9, no. 1, pp. 64–75.
- [73] R. Mishra, H. P. Gupta, and T. Dutta, “A network resource aware federated learning approach using knowledge distillation,” in *Proc. IEEE INFOCOM WKSHPs*, 2021, pp. 1–2.
- [74] G. Hinton, O. Vinyals, and J. Dean, “Distilling the knowledge in a neural network,” *arXiv preprint arXiv:1503.02531*, 2015.
- [75] B. McMahan, E. Moore, D. Ramage, S. Hampson, and B. A. y Arcas, “Communication-efficient learning of deep networks from decentralized data,” in *Proc. AISTATS*, 2017, pp. 1273–1282.
- [76] N. Srivastava, G. Hinton, A. Krizhevsky, I. Sutskever, and R. Salakhutdinov, “Dropout: a simple way to prevent neural networks from overfitting,” *The journal of machine learning research*, 2014, vol. 15, no. 1, pp. 1929–1958.
- [77] S. Bhattacharya and N. D. Lane, “Sparsification and separation of deep learning layers for constrained resource inference on wearables,” in *Proc. ACM SenSys*, 2016, pp. 176–189.
- [78] G.-B. Zhou, J. Wu, C.-L. Zhang, and Z.-H. Zhou, “Minimal gated unit for recurrent neural networks,” *International Journal of Automation and Computing*, 2016, vol. 13, no. 3, pp. 226–234.
- [79] Z. Zhang and M. Sabuncu, “Generalized cross entropy loss for training deep neural networks with noisy labels,” in *Proc. NIPS*, 2018, pp. 8778–8788.

- [80] N. H. Tran, W. Bao, A. Zomaya, M. N. H. Nguyen, and C. S. Hong, "Federated learning over wireless networks: Optimization model design and analysis," in *Proc. IEEE INFOCOM*, 2019, pp. 1387–1395.
- [81] P. Kyritsi, R. Valenzuela, and D. Cox, "Channel and capacity estimation errors," *IEEE Communications Letters*, 2002, vol. 6, no. 12, pp. 517–519.
- [82] X. Li, K. Huang, W. Yang, S. Wang, and Z. Zhang, "On the convergence of fedavg on non-iid data," *arXiv preprint arXiv:1907.02189*, 2019.
- [83] D. J. Cook, A. S. Crandall, B. L. Thomas, and N. C. Krishnan, "CASAS: A smart home in a box," *IEEE Computer*, 2013, vol. 46, no. 7, pp. 62–69.
- [84] S. AbdulRahman, H. Tout, H. Ould-Slimane, A. Mourad, C. Talhi, and M. Guizani, "A survey on federated learning: The journey from centralized to distributed on-site learning and beyond," *IEEE Internet of Things Journal*, 2020, vol. 8, no. 7, pp. 5476–5497.
- [85] V. Mothukuri, R. M. Parizi, S. Pouriye, Y. Huang, A. Dehghantaha, and G. Srivastava, "A survey on security and privacy of federated learning," *Future Generation Computer Systems*, 2021, vol. 115, pp. 619–640.
- [86] Z. Peng, J. Xu, X. Chu, S. Gao, Y. Yao, R. Gu, and Y. Tang, "Vfchain: Enabling verifiable and auditable federated learning via blockchain systems," *IEEE Transactions on Network Science and Engineering*, 2021, vol. 9, no. 1, pp. 173–186.
- [87] E. Casalicchio and S. Iannucci, "The state-of-the-art in container technologies: Application, orchestration and security," *Concurrency and Computation: Practice and Experience*, 2020, vol. 32, no. 17, p. e5668.
- [88] M. Amaral, J. Polo, D. Carrera, I. Mohamed, M. Unuvar, and M. Steinder, "Performance evaluation of microservices architectures using containers," in *2015 IEEE 14th International Symposium on Network Computing and Applications*. IEEE, 2015, pp. 27–34.
- [89] J. P. Kanne, B. P. Little, J. H. Chung, B. M. Elicker, and L. H. Ketaj, "Essentials for radiologists on covid-19: An update—radiology scientific expert panel," *Radiology*, 2020, vol. 296, no. 2, pp. E113–E114, PMID: 32105562. [Online]. Available: <https://doi.org/10.1148/radiol.2020200527>

- [90] X. Xie, Z. Zhong, W. Zhao, C. Zheng, F. Wang, and J. Liu, “Chest ct for typical coronavirus disease 2019 (covid-19) pneumonia:relationship to negative rt-pcr testing,” *Radiology*, 2020, vol. 296, no. 2, pp. E41–E45, pMID: 32049601. [Online]. Available: <https://doi.org/10.1148/radiol.2020200343>
- [91] Z. Y. Zu, M. D. Jiang, P. P. Xu, W. Chen, Q. Q. Ni, G. M. Lu, and L. J. Zhang, “Coronavirus disease 2019 (covid-19): A perspective from china,” *Radiology*, 2020, vol. 296, no. 2, pp. E15–E25, pMID: 32083985. [Online]. Available: <https://doi.org/10.1148/radiol.2020200490>
- [92] P. Kairon and S. Bhattacharyya, “Covid-19 outbreak prediction using quantum neural networks,” *Intelligence Enabled Research: DoSIER 2020*, 2021, pp. 113–123.
- [93] S. F. Ardabili, A. Mosavi, P. Ghamisi, F. Ferdinand, A. R. Varkonyi-Koczy, U. Reuter, T. Rabczuk, and P. M. Atkinson, “Covid-19 outbreak prediction with machine learning,” *Algorithms*, 2020, vol. 13, no. 10, p. 249.
- [94] P. Schwab, A. DuMont Schütte, B. Dietz, and S. Bauer, “Clinical predictive models for covid-19: systematic study,” *Journal of medical Internet research*, 2020, vol. 22, no. 10, p. e21439.
- [95] W. T. Li, J. Ma, N. Shende, G. Castaneda, J. Chakladar, J. C. Tsai, L. Apostol, C. O. Honda, J. Xu, L. M. Wong *et al.*, “Using machine learning of clinical data to diagnose covid-19: a systematic review and meta-analysis,” *BMC medical informatics and decision making*, 2020, vol. 20, no. 1, pp. 1–13.
- [96] Q. Li, Z. Wen, Z. Wu, S. Hu, N. Wang, Y. Li, X. Liu, and B. He, “A survey on federated learning systems: Vision, hype and reality for data privacy and protection,” *IEEE Transactions on Knowledge and Data Engineering*, 2021.
- [97] Q. Yang, Y. Liu, T. Chen, and Y. Tong, “Federated machine learning: Concept and applications,” *ACM Transactions on Intelligent Systems and Technology (TIST)*, 2019, vol. 10, no. 2, pp. 1–19.
- [98] J. Park, S. Samarakoon, A. Elgabli, J. Kim, M. Bennis, S.-L. Kim, and M. Debbah, “Communication-efficient and distributed learning over wireless networks: Principles and applications,” *arXiv preprint arXiv:2008.02608*, 2020.

- [99] M. Aledhari, R. Razzak, R. M. Parizi, and F. Saeed, "Federated learning: A survey on enabling technologies, protocols, and applications," *IEEE Access : Practical Innovations, Open Solutions*, 2020, vol. 8, p. 140699.
- [100] S. K. Lo, Q. Lu, C. Wang, H. Paik, and L. Zhu, "A systematic literature review on federated machine learning: From a software engineering perspective," *ArXiv*, 2020.
- [101] Z. Li, V. Sharma, and S. P. Mohanty, "Preserving data privacy via federated learning: Challenges and solutions," *IEEE Consumer Electronics Magazine*, 2020, vol. 9, no. 3, pp. 8–16.
- [102] A. Farhad, S. Woolley, and P. Andras, "Federated learning for ai to improve patient care using wearable and iomt sensors," in *2021 IEEE 9th International Conference on Healthcare Informatics (ICHI)*. Los Alamitos, CA, USA: IEEE Computer Society, aug 2021, pp. 434–434. [Online]. Available: <https://doi.ieeecomputersociety.org/10.1109/ICHI52183.2021.00071>
- [103] B. B. Rad, H. J. Bhatti, and M. Ahmadi, "An introduction to docker and analysis of its performance," *International Journal of Computer Science and Network Security (IJCSNS)*, 2017, vol. 17, no. 3, p. 228.
- [104] Y. Zhang, S. Miao, T. Mansi, and R. Liao, "Unsupervised x-ray image segmentation with task driven generative adversarial networks," *Med Image Anal*, May 2020, vol. 62, p. 101664, epub 2020 Feb 7. [Online]. Available: <https://doi.org/10.1016/j.media.2020.101664>
- [105] P. Rajpurkar, J. Irvin, K. Zhu, B. Yang, H. Mehta, T. Duan, D. Ding, A. Bagul, C. Langlotz, K. Shpanskaya, M. P. Lungren, and A. Y. Ng, "Chexnet: Radiologist-level pneumonia detection on chest x-rays with deep learning," *ArXiv*, 2017.
- [106] S. Xu, H. Wu, and R. Bie, "Cxnet-m1: Anomaly detection on chest x-rays with image-based deep learning," *IEEE Access*, 2019, vol. 7, pp. 4466–4477.
- [107] H. Shi, X. Han, N. Jiang, Y. Cao, O. Alwalid, J. Gu, Y. Fan, and C. Zheng, "Radiological findings from 81 patients with covid-19 pneumonia in wuhan, china: a descriptive study," *The Lancet Infectious Diseases*, 2020, vol. 20, no. 4, pp. 425–434.

- [108] E. E. Hemdan, M. A. Shouman, and M. E. Karar, "Covidx-net: A framework of deep learning classifiers to diagnose covid-19 in x-ray images," *ArXiv*, 2020.
- [109] L. Wang, Z. Q. Lin, and A. Wong, "Covid-net: A tailored deep convolutional neural network design for detection of covid-19 cases from chest x-ray images," *Scientific reports*, 2020, vol. 10, no. 1, p. 19549.
- [110] M. Nour, Z. Cömert, and K. Polat, "A novel medical diagnosis model for covid-19 infection detection based on deep features and bayesian optimization," *Applied Soft Computing*, 2020, vol. 97, p. 106580.
- [111] A. Gupta, Anjum, S. Gupta, and R. Katarya, "Instacovnet-19: A deep learning classification model for the detection of covid-19 patients using chest x-ray," *Applied Soft Computing*, 2021, vol. 99, p. 106859.
- [112] J. Zhang, Y. Xie, G. Pang, Z. Liao, J. Verjans, W. Li, Z. Sun, J. He, Y. Li, C. Shen *et al.*, "Viral pneumonia screening on chest x-rays using confidence-aware anomaly detection," *IEEE transactions on medical imaging*, 2020, vol. 40, no. 3, pp. 879–890.
- [113] T. Ozturk, M. Talo, E. A. Yildirim, U. B. Baloglu, O. Yildirim, and U. R. Acharya, "Automated detection of covid-19 cases using deep neural networks with x-ray images," *Computers in biology and medicine*, 2020, vol. 121, p. 103792.
- [114] A. Narin, C. Kaya, and Z. Pamuk, "Automatic detection of coronavirus disease (covid-19) using x-ray images and deep convolutional neural networks," *Pattern Analysis and Applications*, 2021, vol. 24, pp. 1207–1220.
- [115] M. E. Chowdhury, T. Rahman, A. Khandakar, R. Mazhar, M. A. Kadir, Z. B. Mahbub, K. R. Islam, M. S. Khan, A. Iqbal, N. Al Emadi *et al.*, "Can ai help in screening viral and covid-19 pneumonia?" *Ieee Access*, 2020, vol. 8, pp. 132 665–132 676.
- [116] F. Demir, "Deepcoronet: A deep lstm approach for automated detection of covid-19 cases from chest x-ray images," *Applied soft computing*, 2021, vol. 103, p. 107160.
- [117] F. Shan, Y. Gao, J. Wang, W. Shi, N. Shi, M. Han, Z. Xue, D. Shen, and Y. Shi, "Abnormal lung quantification in chest ct images of covid-19 patients with deep learning and its application to severity prediction," *Medical Physics*, 2021, vol. 48, no. 4, pp. 1633–1645.

-
- [118] O. Gozes, H. Greenspan, P. D. Browning, H. Zhang, W. Ji, A. Bernheim, and E. Siegel, “Rapid ai development cycle for the coronavirus (covid-19) pandemic: Initial results for automated detection & patient monitoring using deep learning ct image analysis,” *ArXiv*, 2020.
- [119] L. Li, L. Qin, Z. Xu, Y. Yin, X. Wang, B. Kong, J. Bai, Y. Lu, Z. Fang, Q. Song *et al.*, “Artificial intelligence distinguishes covid-19 from community acquired pneumonia on chest ct,” *Radiology*, 2020.
- [120] T. S. Brisimi, R. Chen, T. Mela, A. Olshevsky, I. C. Paschalidis, and W. Shi, “Federated learning of predictive models from federated electronic health records,” *International journal of medical informatics*, 2018, vol. 112, pp. 59–67.
- [121] J. Lee, J. Sun, F. Wang, S. Wang, C.-H. Jun, X. Jiang *et al.*, “Privacy-preserving patient similarity learning in a federated environment: development and analysis,” *JMIR medical informatics*, 2018, vol. 6, no. 2, p. e7744.
- [122] L. Huang, A. L. Shea, H. Qian, A. Masurkar, H. Deng, and D. Liu, “Patient clustering improves efficiency of federated machine learning to predict mortality and hospital stay time using distributed electronic medical records,” *Journal of biomedical informatics*, 2019, vol. 99, p. 103291.
- [123] P. Baheti, M. Sikka, K. Arya, and R. Rajesh, “Federated learning on distributed medical records for detection of lung nodules.” in *VISIGRAPP (4: VISAPP)*, 2020, pp. 445–451.

LIST OF PUBLICATIONS

Thesis Work

- **C. Singh**, P. Kumari, R. Mishra, H. P. Gupta and T. Dutta, “Secure Industrial IoT Task Containerization With Deadline Constraint: A Stackelberg Game Approach,” in IEEE Transactions on Industrial Informatics, vol. 18, no. 12, pp. 8674-8681, Dec. 2022, doi: 10.1109/TII.2022.3156647.
- **C. Singh**, R. Mishra, H. P. Gupta, and G. Banga, “A Federated Learning-Based Patient Monitoring System in Internet of Medical Things,” in IEEE Transactions on Computational Social Systems, vol. 10, no. 4, pp. 1622-1628, Aug. 2023, doi: 10.1109/TCSS.2022.3228965.

Other Publication

- **C. Singh**, R. Mishra, H. P. Gupta and P. Kumari, “The Internet of Drones in Precision Agriculture: Challenges, Solutions, and Research Opportunities,” in IEEE Internet of Things Magazine, vol. 5, no. 1, pp. 180-184, March 2022, doi: 10.1109/IOTM.006.2100100