

DAFTAR PUSTAKA

- Agga, A., Abboud, A., LabbadiM. (2021) ‘Short-term self consumption PV plant power production forecasts based on hybrid CNN-LSTM, ConvLSTM models’, *Renewable Energy*, 177, pp. 101–112. Available at: <https://doi.org/10.1016/j.renene.2021.05.095>.
- Agoua, X.G., Girard, R. and Kariniotakis, G. (2018) ‘Short-Term Spatio-Temporal Forecasting of Photovoltaic Power Production’, *IEEE Transactions on Sustainable Energy*, 9(2), pp. 538–546. Available at: <https://doi.org/10.1109/TSTE.2017.2747765>.
- Alavikia, Z. and Shabro, M. (2022) ‘A comprehensive layered approach for implementing internet of things-enabled smart grid: A survey’, *Digital Communications and Networks* [Preprint]. Available at: <https://doi.org/10.1016/j.dcan.2022.01.002>.
- Alharkan, H., Habib, S. and Islam, M. (2023) ‘Solar Power Prediction Using Dual Stream CNN-LSTM Architecture’, *Sensors*, 23(2), p. 945. Available at: <https://doi.org/10.3390/s23020945>.
- Alhousni, F.K., Alnaimi, F., Okonkwo, P., Balgacem, I. (2023) ‘Photovoltaic Power Prediction Using Analytical Models and Homer-Pro: Investigation of Results Reliability’, *Sustainability*, 15(11), p. 8904. Available at: <https://doi.org/10.3390/su15118904>.
- Allafi, I. and Iqbal, T. (2017) *Design and implementation of a low cost web server using ESP32 for real-time photovoltaic system monitoring*.
- Amarnath, D. and Sujatha, S. (2021) ‘Intelligent monitoring and controlling of the PV using hybrid controller system’, *Microprocessors and Microsystems*, 80. Available at: <https://doi.org/10.1016/j.micpro.2020.103619>.
- Ansari, S., Ayob, A., Hossain, L. (2021) ‘A review of monitoring technologies for solar pv systems using data processing modules and transmission protocols: Progress, challenges and prospects’, *Sustainability (Switzerland)*, 13(15). Available at: <https://doi.org/10.3390/su13158120>.

- de Arquer Fernández, P., Angel, F., Luis, J. (2021) ‘An IoT open source platform for photovoltaic plants supervision’, *International Journal of Electrical Power & Energy Systems*, 125, p. 106540. Available at: <https://doi.org/10.1016/J.IJEPES.2020.106540>.
- Aslam, M., Lee, S., Khang, S., Hong, S. (2021) ‘Two-Stage Attention over LSTM with Bayesian Optimization for Day-Ahead Solar Power Forecasting’, *IEEE Access*, 9, pp. 107387–107398. Available at: <https://doi.org/10.1109/ACCESS.2021.3100105>.
- Aslam, S., Herodotou, H., Ayub, H. (2019) ‘Deep Learning Based Techniques to Enhance the Performance of Microgrids: A Review’, in *2019 International Conference on Frontiers of Information Technology (FIT)*. IEEE, pp. 116–1165. Available at: <https://doi.org/10.1109/FIT47737.2019.00031>.
- Aslam, S., Herodotou, H., Mohsin, S., Javaid, N. (2021) ‘A survey on deep learning methods for power load and renewable energy forecasting in smart microgrids’, *Renewable and Sustainable Energy Reviews*, 144(December 2020), p. 110992. Available at: <https://doi.org/10.1016/j.rser.2021.110992>.
- Bacher, P., Madsen, H. and Nielsen, H.A. (2009) ‘Online short-term solar power forecasting’, *Solar Energy*, 83(10), pp. 1772–1783. Available at: <https://doi.org/10.1016/J.SOLENER.2009.05.016>.
- Barua, A., Kumar, J. A., Kumar, M. P. (2021) ‘Design of grid connected microgrid with solar photovoltaic module’, *Materials Today: Proceedings*, 47, pp. 6971–6975. Available at: <https://doi.org/10.1016/j.matpr.2021.05.228>.
- Bhau, G.V., Deshmukh, R., Kumar, T., Chowdury, S. (2021) ‘IoT based solar energy monitoring system’, *Materials Today: Proceedings* [Preprint]. Available at: <https://doi.org/10.1016/J.MATPR.2021.07.364>.
- Bounoua, I., Saidi, Y., Yaagoubi, R., Bouziani, M. (2024) ‘Deep Learning Approaches for Water Stress Forecasting in Arboriculture Using Time Series of Remote Sensing Images: Comparative Study between

- ConvLSTM and CNN-LSTM Models', *Technologies*, 12(6), p. 77.
Available at: <https://doi.org/10.3390/technologies12060077>.
- Cao, J.C. and Cao, S.H. (2006) 'Study of forecasting solar irradiance using neural networks with preprocessing sample data by wavelet analysis', *Energy*, 31(15), pp. 3435–3445. Available at: <https://doi.org/10.1016/J.ENERGY.2006.04.001>.
- Cao, S. and Cao, J. (2005) 'Forecast of solar irradiance using recurrent neural networks combined with wavelet analysis', *Applied Thermal Engineering*, 25(2–3), pp. 161–172. Available at: <https://doi.org/10.1016/J.APPLTHERMALENG.2004.06.017>.
- Cervone, G., Clemente-Harding, L., Alessandrini, S., Delle-Monache, L. (2017) 'Short-term photovoltaic power forecasting using Artificial Neural Networks and an Analog Ensemble', *Renewable Energy*, 108, pp. 274–286. Available at: <https://doi.org/10.1016/j.renene.2017.02.052>.
- Chen, Kunjin., He, Ziyu., Chen, Kunlong., Hu, J., He, Jinliang. (2017) 'Solar energy forecasting with numerical weather predictions on a grid and convolutional networks', in *2017 IEEE Conference on Energy Internet and Energy System Integration (EI2)*. IEEE, pp. 1–5. Available at: <https://doi.org/10.1109/EI2.2017.8245549>.
- Chen, W., Han, G., Zhu, H., Liao, L. (2022) 'Short-Term Load Forecasting with an Ensemble Model Based on 1D-UCNN and Bi-LSTM', *Electronics*, 11(19), p. 3242. Available at: <https://doi.org/10.3390/electronics11193242>.
- Chouder, A., Silvestre, S., Taghezouit, B., Karatepe, E. (2013) 'Monitoring, modelling and simulation of PV systems using LabVIEW', *Solar Energy*, 91, pp. 337–349. Available at: <https://doi.org/10.1016/J.SOLENER.2012.09.016>.
- Come Zebra, E.I., van der Windt, H.J., Nhumaio, G., Faaij, André, P.C. (2021) 'A review of hybrid renewable energy systems in mini-grids for off-grid electrification in developing countries', *Renewable and Sustainable*

- Energy Reviews*, 144, p. 111036. Available at: <https://doi.org/10.1016/J.RSER.2021.111036>.
- Deshmukh, M.K. and Singh, A.B. (2020) ‘Online monitoring of roof-mounted stand-alone solar photovoltaic system on residential building’, *Materials Today: Proceedings*, 23, pp. 56–61. Available at: <https://doi.org/10.1016/J.MATPR.2019.06.487>.
- Dileep, G. (2020) ‘A survey on smart grid technologies and applications’, *Renewable Energy*, 146, pp. 2589–2625. Available at: <https://doi.org/10.1016/j.renene.2019.08.092>.
- Emamian, M., Eskandari, A., Aghaei, M., Nedaei, A., Sizkouhi, A.M., Milimonfared, J. (2022) ‘Cloud Computing and IoT Based Intelligent Monitoring System for Photovoltaic Plants Using Machine Learning Techniques’, *Energies*, 15(9). Available at: <https://doi.org/10.3390/en15093014>.
- Forero, N., Hernández, J. and Gordillo, G. (2006) ‘Development of a monitoring system for a PV solar plant’, *Energy Conversion and Management*, 47(15–16), pp. 2329–2336. Available at: <https://doi.org/10.1016/j.enconman.2005.11.012>.
- Genevieve C. Ngo; Judd Kristian I. Floriza; Christine May C. Creayla; Felan Carlo C. Garcia; (2015) *Real-time energy monitoring system for grid-tied Photovoltaic installations*.
- Gensler, A., Henze, J., Sick, B., Raabe, N. (2016) ‘Deep Learning for solar power forecasting — An approach using AutoEncoder and LSTM Neural Networks’, in *2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC)*. IEEE, pp. 002858–002865. Available at: <https://doi.org/10.1109/SMC.2016.7844673>.
- Gligor, A., Dumitru, C.D. and Grif, H.S. (2018) ‘Artificial intelligence solution for managing a photovoltaic energy production unit’, *Procedia Manufacturing*, 22, pp. 626–633. Available at: <https://doi.org/10.1016/j.promfg.2018.03.091>.

- Guerriero, P., Di-Napoli, F., Vallone, G., Dalessandro, V., Daliento, S. (2016) 'Monitoring and diagnostics of PV plants by a wireless self-powered sensor for individual panels', *IEEE Journal of Photovoltaics*, 6(1), pp. 286–294. Available at: <https://doi.org/10.1109/JPHOTOV.2015.2484961>.
- Guo, X., Gao, Y., Zheng, D., Ning, Y., Zhao, Q. (2020) 'Study on short-term photovoltaic power prediction model based on the Stacking ensemble learning', *Energy Reports*, 6, pp. 1424–1431. Available at: <https://doi.org/10.1016/j.egyr.2020.11.006>.
- Han, J. Choi, C., Park, W., Lee, I., Kim, S. (2014) *Smart Home Energy Management System Including Renewable Energy Based on ZigBee and PLC*, *IEEE Transactions on Consumer Electronics*.
- Han, J., Jeong, J., Lee, I., Kim, S. (2017) 'Low-cost monitoring of photovoltaic systems at panel level in residential homes based on power line communication', *IEEE Transactions on Consumer Electronics*, 63(4), pp. 435–441. Available at: <https://doi.org/10.1109/TCE.2017.015074>.
- Han, J., Lee, I. and Kim, S.-H. (2015) *User-Friendly Monitoring System for Residential PV System Based on Low-Cost Power Line Communication*.
- IEA (2022) *World Energy Outlook 2022*, IEA (International Energy Agency). Available at: <https://www.iea.org/countries/indonesia/energy-mix> (Accessed: 2 October 2024).
- Jailani, N.L.M., Dhanasegaran, J.K., Alkawsi, G., Alkahtani, A.A., Phing, C.C., Baashar, Y., Capretz, L.F., Al-Shetwi, A.Q., Tiong, S.K. (2023) 'Investigating the Power of LSTM-Based Models in Solar Energy Forecasting', *Processes*, 11(5), p. 1382. Available at: <https://doi.org/10.3390/pr11051382>.
- Kermani, M., Adelmanesh, B., Shirdare, E., Sima, C.A., Carni, D.L., Martirano, L. (2021) 'Intelligent energy management based on SCADA system in a real Microgrid for smart building applications', *Renewable Energy*, 171, pp. 1115–1127. Available at: <https://doi.org/10.1016/J.RENENE.2021.03.008>.

- Kim, D.-Y., Lee, S.-H. and Jeong, G.-M. (2021) 'Stack LSTM-Based User Identification Using Smart Shoes with Accelerometer Data', *Sensors*, 21(23), p. 8129. Available at: <https://doi.org/10.3390/s21238129>.
- Labrador Rivas, A.E. and Abrão, T. (2020) 'Faults in smart grid systems: Monitoring, detection and classification', *Electric Power Systems Research*, 189, p. 106602. Available at: <https://doi.org/10.1016/J.EPSR.2020.106602>.
- Le, P.T., Tsai, H.L. and Lam, T.H. (2016) 'A wireless visualization monitoring, evaluation system for commercial photovoltaic modules solely in MATLAB/Simulink environment', *Solar Energy*, 140, pp. 1–11. Available at: <https://doi.org/10.1016/J.SOLENER.2016.10.043>.
- Lee, H.C. and Ke, K.H. (2018) 'Monitoring of Large-Area IoT Sensors Using a LoRa Wireless Mesh Network System: Design and Evaluation', *IEEE Transactions on Instrumentation and Measurement*, 67(9), pp. 2177–2187. Available at: <https://doi.org/10.1109/TIM.2018.2814082>.
- Lopez, A., Mantinan, F. and Moline, M. (2012) *Implementation of wireless remote monitoring and control of solar photovoltaic (PV) system*.
- Lopez-Vargas, A., Fuentes, M. and Vivar, M. (2019) 'IoT Application for Real-Time Monitoring of Solar Home Systems Based on Arduino™ with 3G Connectivity', *IEEE Sensors Journal*, 19(2), pp. 679–691. Available at: <https://doi.org/10.1109/JSEN.2018.2876635>.
- Madeti, S.R. and Singh, S.N. (2017a) 'Monitoring system for photovoltaic plants: A review', *Renewable and Sustainable Energy Reviews*, 67, pp. 1180–1207. Available at: <https://doi.org/10.1016/j.rser.2016.09.088>.
- Madeti, S.R. and Singh, S.N. (2017b) 'Monitoring system for photovoltaic plants: A review', *Renewable and Sustainable Energy Reviews*, 67, pp. 1180–1207. Available at: <https://doi.org/10.1016/j.rser.2016.09.088>.
- Marino, C.A., Chinelato, F. and Marufuzzaman, M. (2022) 'AWS IoT analytics platform for microgrid operation management', *Computers & Industrial Engineering*, 170, p. 108331. Available at: <https://doi.org/10.1016/J.CIE.2022.108331>.

- Martin-Martínez, F., Sánchez-Miralles, A. and Rivier, M. (2016) 'A literature review of Microgrids: A functional layer based classification', *Renewable and Sustainable Energy Reviews*, 62, pp. 1133–1153. Available at: <https://doi.org/10.1016/j.rser.2016.05.025>.
- Mellit, A., Benghane, M. and Kalogirou, S.A. (2006) 'An adaptive wavelet-network model for forecasting daily total solar-radiation', *Applied Energy*, 83(7), pp. 705–722. Available at: <https://doi.org/10.1016/J.APENERGY.2005.06.003>.
- Mudaliar, M.D. and Sivakumar, N. (2020) 'IoT based real time energy monitoring system using Raspberry Pi', *Internet of Things*, 12, p. 100292. Available at: <https://doi.org/10.1016/J.IOT.2020.100292>.
- Mukai, T., Tomasella, M., Parlikad, A.K., Abe, N., Ueda, Y. (2014) 'The competitiveness of continuous monitoring of residential PV systems: A model and insights from the Japanese market', *IEEE Transactions on Sustainable Energy*, 5(4), pp. 1176–1183. Available at: <https://doi.org/10.1109/TSTE.2014.2338933>.
- Nižetić, S., Šolić, P., López-de-Ipiña González-de-Artaza, D., Patrono, L. (2020) 'Internet of Things (IoT): Opportunities, issues and challenges towards a smart and sustainable future', *Journal of Cleaner Production*, 274. Available at: <https://doi.org/10.1016/j.jclepro.2020.122877>.
- Paredes-Parra, J.M., Mateo-Aroca, A., Silvente-Niñirola, G., Bueso, M.C., Molina-García, A. (2018) 'PV module monitoring system based on low-cost solutions: Wireless raspberry application and assessment', *Energies*, 11(11). Available at: <https://doi.org/10.3390/en11113051>.
- Peinado Gonzalo, A., Pliego Marugán, A. and García Márquez, F.P. (2020) 'Survey of maintenance management for photovoltaic power systems', *Renewable and Sustainable Energy Reviews*. Elsevier Ltd. Available at: <https://doi.org/10.1016/j.rser.2020.110347>.
- Pereira, R.I.S., Dupont, I.M., Carvalho, P.C.M., Jucá, S.C.S. (2018) 'IoT embedded linux system based on Raspberry Pi applied to real-time cloud monitoring

- of a decentralized photovoltaic plant', *Measurement*, 114, pp. 286–297. Available at: <https://doi.org/10.1016/J.MEASUREMENT.2017.09.033>.
- Raghunath, N., Deshmukh, M.K. and Deshmukh, S.S. (2021) 'Field Performance Monitoring of Roof-Mounted SPV Systems: Application of Internet-Enabled Technologies', *Smart Innovation, Systems and Technologies*, 213 SIST, pp. 559–569. Available at: https://doi.org/10.1007/978-981-33-4443-3_54.
- Rahman, M.M., Selvaraj, J., Rahim, N.A., Hasanuzzaman, M. (2018) 'Global modern monitoring systems for PV based power generation: A review', *Renewable and Sustainable Energy Reviews*, 82, pp. 4142–4158. Available at: <https://doi.org/10.1016/J.RSER.2017.10.111>.
- Rahman, M.M., Shakeri, M., Tiong, S.K., Khatun, F., Amin, N., Pasupuleti, J., Hasan, M.K. (2021) 'Prospective Methodologies in Hybrid Renewable Energy Systems for Energy Prediction Using Artificial Neural Networks', *Sustainability*, 13(4), p. 2393. Available at: <https://doi.org/10.3390/su13042393>.
- Ranhotigamage, C. and Mukhopadhyay, S.C. (2011) 'Field trials and performance monitoring of distributed solar panels using a low-cost wireless sensors network for domestic applications', *IEEE Sensors Journal*, 11(10), pp. 2583–2590. Available at: <https://doi.org/10.1109/JSEN.2011.2150214>.
- Reikard, G. (2009) 'Predicting solar radiation at high resolutions: A comparison of time series forecasts', *Solar Energy*, 83(3), pp. 342–349. Available at: <https://doi.org/10.1016/J.SOLENER.2008.08.007>.
- Rengasamy, M. *et al.* (2021) 'Incorporation of Microgrid Technology Solutions to Reduce Power Loss in a Distribution Network with Elimination of Inefficient Power Conversion Strategies', *Sustainability*, 13(24), p. 13882. Available at: <https://doi.org/10.3390/su132413882>.
- Said, S.M., Aly, M. and Balint, H. (2020) 'An Efficient Reactive Power Dispatch Method for Hybrid Photovoltaic and Superconducting Magnetic Energy Storage Inverters in Utility Grids', *IEEE Access*, 8, pp. 183708–183721. Available at: <https://doi.org/10.1109/ACCESS.2020.3029326>.

- Samara, S. and Natsheh, E. (2019) ‘Intelligent Real-Time Photovoltaic Panel Monitoring System Using Artificial Neural Networks’, *IEEE Access*, 7, pp. 50287–50299. Available at: <https://doi.org/10.1109/ACCESS.2019.2911250>.
- Shaban, M., Ben-Dhaou, I., Alsharekh, M.F., Abdel-Akher, M. (2021) ‘Design of a partially grid-connected photovoltaic microgrid using IoT technology’, *Applied Sciences (Switzerland)*, 11(24). Available at: <https://doi.org/10.3390/app112411651>.
- Sharma, N. *et al.* (2011) ‘Predicting solar generation from weather forecasts using machine learning’, in *2011 IEEE International Conference on Smart Grid Communications (SmartGridComm)*. IEEE, pp. 528–533. Available at: <https://doi.org/10.1109/SmartGridComm.2011.6102379>.
- Succetti, F., Rosato, A., Araneo, R., Panella, M. (2020) ‘Deep Neural Networks for Multivariate Prediction of Photovoltaic Power Time Series’, *IEEE Access*, 8, pp. 211490–211505. Available at: <https://doi.org/10.1109/ACCESS.2020.3039733>.
- Tejwani, R., Kumar, G. and Solanki, C. (2014) ‘Remote Monitoring for Solar Photovoltaic Systems in Rural Application Using GSM Voice Channel’, *Energy Procedia*, 57, pp. 1526–1535. Available at: <https://doi.org/10.1016/J.EGYPRO.2014.10.145>.
- Teso-Fz-Betoño, A., Zulueta, E., Cabezas-Olivenza, M., Teso-Fz-Betoño, D., Fernandez-Gamiz, U. (2022) ‘A Study of Learning Issues in Feedforward Neural Networks’, *Mathematics*, 10(17), p. 3206. Available at: <https://doi.org/10.3390/math10173206>.
- Touati, F., Al-Hitmi, M. A., Chowdhury, N.A., Hamad, J.A., San Pedro Gonzales, A.J.R. (2016) ‘Investigation of solar PV performance under Doha weather using a customized measurement and monitoring system’, *Renewable Energy*, 89, pp. 564–577. Available at: <https://doi.org/10.1016/J.RENENE.2015.12.046>.
- Uddin, M., Mo, H., Dong, D., Elsayah, S., Zhu, J., Guerrero, J.M. (2023) ‘Microgrids: A review, outstanding issues and future trends’, *Energy*

Strategy Reviews, 49, p. 101127. Available at:
<https://doi.org/10.1016/j.esr.2023.101127>.

Ullah, Z., Wang, S., Wu, G., Xiao, M., Lai, J., Elkadeem, M.R. (2022) ‘Advanced energy management strategy for microgrid using real-time monitoring interface’, *Journal of Energy Storage*, 52, p. 104814. Available at:
<https://doi.org/10.1016/J.EST.2022.104814>.

Worighi, I., Maach, A., Hafid, A., Hegazy, O., Van Mierlo, J. (2019) ‘Integrating renewable energy in smart grid system: Architecture, virtualization and analysis’, *Sustainable Energy, Grids and Networks*, 18, p. 100226. Available at: <https://doi.org/10.1016/j.segan.2019.100226>.

Zia, M.F., Elbouchikhi, E. and Benbouzid, M. (2018) ‘Microgrids energy management systems: A critical review on methods, solutions, and prospects’, *Applied Energy*, 222, pp. 1033–1055. Available at:
<https://doi.org/10.1016/J.APENERGY.2018.04.103>.

SEKOLAH PASCASARJANA