Brilliance
Research of Artificial Intelligence

E-ISSN : 2807-9035
Volume 5, Number 1, May 2025
https://doi.org/10.47709/brilliance.v5i1.5876

Wireless Network Design at Pamekasan Regency Public Library

Fauzan Prasetyo Eka Putra[1], Moh. Irfan[2*], Mohammad aziz[3], Rama Nurja Saputra[4]
[1,2,3,4]Fakultas Teknik, Informatika Universitas Madura Jl. Raya Panglegur No.Km 3,5, Barat, Panglegur, Kec. Tlanakan, Kabupaten Pamekasan, Jawa Timur 69371
[1]prasetyo@unira.ac.id, [2]irvaan37@gmail.com, [3]mohammadaziiz97@gmail.com, [4]ramanurj@gmail.com

***Corresponding Author**

Article History:
Submitted: 08-05-2025
Accepted: 17-05-2025
Published: 28-05-2025

Keywords:
Access Point; Coverage; Library Network; Network Design; Wireless.

ABSTRACT

The increasing demand for internet access in public service spaces, such as libraries, necessitates a reliable and efficient wireless network. This study aims to design a wireless network for the Pamekasan Regency Public Library to enhance user experience in accessing digital resources. The methodology includes a site survey, analysis of user needs, simulation of access point (AP) placement using Ekahau software, and evaluation based on signal strength, coverage, and user traffic. The study was conducted across three types of libraries: public, school, and campus libraries in Pamekasan. Each location was assessed for building structure, user density, and interference sources. The simulation results determined optimal AP placement, utilizing dual-band (2.4 GHz and 5 GHz) access points to achieve minimum signal levels of -67 dBm and a Signal-to-Noise Ratio (SNR) above 25 dB. The findings indicate that the proposed network design can provide stable, wide-ranging wireless access in all key service areas. This study concludes that effective network design, based on detailed site surveys and technical simulations, is crucial for supporting digital library services. The proposed design contributes to improving information access and is expected to serve as a reference for similar implementations in other public institutions.

INTRODUCTION

The rapid development of information and communication technology (ICT) has driven transformation in various public service sectors, including libraries(Santoso, 2023)(Ananta et al., 2024)(Lumbanraja & Lumbanraja, 2024). Libraries as literacy centers and public information providers now not only rely on physical collections, but are also required to provide fast and easy access to digital information(Kasatriyanto & Ardy Wibowo, 2021)(Naufal, 2021)(Yudistira & Novita, 2022)(Meoerdijati, 2012). One of the important needs that must be met is the provision of a wireless internet network that can be accessed by all visitors stably and evenly throughout the library area(Muhammad Ibrahim et al., 2024)(Suhud, 2022)(Valendra et al., 2024).

Pamekasan Regency Public Library is one of the public facilities that plays an important role in improving the quality of education and literacy of the community(ROSIKIN, 2024)(Wahyuanto, 2024)(Armyani, 2023). However, until now, there are still obstacles in terms of network infrastructure that have not been optimized, especially in providing wireless internet access that can reach all library rooms with adequate speed and stability(Haiqa, n.d.)(EH, 2024)(Prathama et al., 2024)(Jumadi et al., 2022). This condition has an impact on the low efficiency of using digital services, such as e-book access, online journals, and internet-based administrative services(Muntashir, 2022)(MEIYANDIE, 2023)(Sistem & Android, 2021).

Several previous studies have shown the importance of proper wireless network design in supporting the quality of digital services in public spaces(Ningrum & Sekti, 2024)(Eka, 2022)(Saputra, 2024)(Teknik Mesin, 2023). For example, a study by Putra et al. (2020) showed that access point placement planning that considers building structure and user density can significantly improve signal quality and network coverage(Agum & Lela, 2023)(Teknologi et al., 2023)(Wibowo, 2024)(Alvirra et al., 2024). However, most studies are still general in nature and have not specifically addressed local contexts, such as infrastructure conditions and user characteristics in regional libraries(Putra & Setiawan, 2024)(Aditya Aji Pamungkas et al., 2024)(Gultom et al., 2023).

Based on this background, this research aims to design a wireless network at the Pamekasan Regency Public Library with a technical approach that considers aspects of user needs, building structure, and potential interference(Novita, 2024)(Amala et al., 2023)(Ependi, 2022)(Flomina et al., 2024). This research is expected to make a real contribution in improving the quality of library services and become a reference for network planning in other public facilities that have similar characteristics(Istiqlalia et al., 2023)(Kusbastio, 2022)(Saskara et al., 2024)(Sudipa et al., 2023).

LITERATURE REVIEW

Digital transformation has encouraged all institutions, including libraries, to strengthen information technology infrastructure to support wider and faster access to information sources(Ali, 2020)(Kominfo, 2020)(Wirawan &

Brilliance
Research of Artificial Intelligence

E-ISSN : 2807-9035
Volume 5, Number 1, May 2025
https://doi.org/10.47709/brilliance.v5i1.5876

Nugroho, 2023). In Pamekasan Regency, libraries have a strategic role in supporting education and literacy activities(Setiawan, 2022)(Kabenarang et al., 2022a). However, based on initial observations by Irfan, Aziz, and Rama, there are still many libraries-school, public, and campus libraries-that are not equipped with adequate wireless networks(Muttaqin et al., 2024)(Syakur et al., 2017).

School libraries in Pamekasan generally have limited infrastructure, with weak internet connections and closed reading rooms causing uneven signal distribution(Alifah, 2024). Meanwhile, public libraries tend to serve communities with diverse backgrounds, including students, college students, and the general public, who have high bandwidth requirements, especially when accessing multimedia and e-learning(MUJIB, 2023). On the other hand, campus libraries usually have complex building structures and a larger number of users, especially during exam periods or online seminars(Syahril & ST, 2022).

Several studies have shown the importance of wireless network design that adapts to the needs of library institutions. The study by Prasetyo and Lestari (2020) states that wireless mesh-based network topology is effective for reaching large and multi-storey library spaces(Memito et al., 2024)(Nugroho, 2022). Research by Hafidz (2021) in one private school library shows that the use of enterprise-class access points can improve signal distribution by up to 60% compared to ordinary home devices(Slameta et al., 2023)(INDRAWATI, 2024).

Apart from technical factors, the design approach must also consider user characteristics and visiting patterns. Research by Syarifuddin and Maulida (2022) shows that the peak hours of network usage in school libraries occur at 09.00-11.00, while in campus libraries it tends to be longer, from 08.00 to 16.00. Therefore, analyzing user traffic is an important element in the design process(Hidayat et al., 2024).

To support the design of the wireless network in Pamekasan, various references and case studies related to the design of similar library networks were reviewed, as summarized in the following table.

Table 1. Summary of Previous Research Related to Wireless Network Design in Libraries

No	Researcher	Year	Library Location/Type	Findings
1.	Prasetyo & Lestari	2020	City Public Library	Mesh topology improves signal coverage in multi-storey buildings
2.	Hafidz	2021	Private School Library	Enterprise-class access point improves connection stability and throughput
3.	Syarifuddin & Maulida	2022	Campus Library	Highest network utilization time occurs during academic activities, requiring high bandwidth
4.	Irfan, Aziz, & Rama	2024	Pamekasan City Public	Need network design that is adaptive to space characteristics and usage schedules

From the literature review above, it can be concluded that the design of wireless networks for libraries needs to consider building typology, operational time, and different types of users in each type of library. Therefore, this research aims to develop a wireless network design that is applicable and relevant to be implemented in all types of libraries in the Pamekasan Regency area.

METHOD

This research uses a case study-based network systems engineering design approach that is applied specifically to several types of libraries in Pamekasan Regency, namely: school libraries, public libraries, and campus libraries. The methodology used includes field observation, user needs analysis, existing infrastructure survey, network planning simulation, to the preparation of the final wireless network design(Iqbal et al., 2024).

Research Approach

This type of research is applied research with qualitative and quantitative approaches. Qualitative is used to understand the needs and conditions of each type of library, while quantitative is used to measure technical parameters such as signal strength, throughput, and estimated number of users(Astarina et al., 2024).

Research Location

The research was conducted at several library points in Pamekasan area, among others:

1. Pamekasan Regency Public Library
2. Library of SMK Negeri 1 Proppo
3. University of Madura Library

Brilliance
Research of Artificial Intelligence
E-ISSN : 2807-9035
Volume 5, Number 1, May 2025
https://doi.org/10.47709/brilliance.v5i1.5876

Research Steps

This research was conducted in several stages as follows:

Table 2. Stages of Research Methodology

Stage	Activities	Destination
1.	Identify the location and structure of the library building	Knowing the physical condition to determine AP placement strategy
2.	User requirements analysis	Determine the required capacity and bandwidth
3.	Existing signal measurement and mapping	Know your blindspot areas and available signal strength
4.	Network design simulation using Ekahau/NetSpot	Design access point placement and predict network performance
5.	Design evaluation based on coverage, signal strength, and SNR parameters	Assess whether the design meets technical and functional needs
6.	Preparation of final design documents	Provide network implementation blueprint

Software and Tools

Ekahau Heatmapper / NetSpot: to simulate signal distribution and AP placement
InSSIDer / Wifi Analyzer: to measure existing WiFi signal strength
Google Sheets / Excel: for analysis and documentation of bandwidth and traffic requirements

Evaluation Parameters

The design evaluation is based on:
Signal coverage: minimum -67 dBm throughout the service area
SNR (Signal-to-Noise Ratio): minimum 25 dB
Number of users per access point: maximum 30 active users per AP for convenience.

With this method, it is expected that the resulting wireless network design can meet the needs of digital information access with high service quality in various types of libraries in Pamekasan Regency.

RESULT

The results of this study were obtained through field surveys, analysis of user needs, and network simulations using Ekahau software(Rindorindo, 2023)(Hidayatulloh, 2014). The goal was to produce a wireless network design that provides stable internet coverage and meets user demands in three library types: public, school, and campus libraries in Pamekasan Regency(SARI, 2023)(Kabenarang et al., 2022) (BUDIMAN, 2024).

Site Survey and User Needs

Each library was assessed based on its building layout, room types, and estimated number of active users. The public library, with two floors and several digital service rooms, had an average of 30–50 users daily. The school library had fewer users (15–25), while the university library had higher traffic (60–80 users), especially during exam periods. All three locations showed coverage gaps, particularly in rooms with thick walls or isolated corners.

Simulation Results

Using Ekahau software, access point (AP) placement was simulated with consideration of wall materials, user distribution, and space dimensions. The design used dual-band APs (2.4 GHz and 5 GHz) for better performance. The simulation produced the following results:

The following is a summary of the simulation results for the three locations:

Table 3. Simulation Results of Wireless Network Design

Library	NO. of APs	Coverage Area (m^2)	Avg. Signal (dBm)	SNR (dB)
Pamekasan Public Library	4	480	–64	28
SMK Negeri 1 Proppo Library	2	180	-62	30
Madura University Library	6	720	-66	26

E-ISSN : 2807-9035
Volume 5, Number 1, May 2025
https://doi.org/10.47709/brilliance.v5i1.5876

The simulation results show that all important rooms in each library can be reached with signal strength above -67 dBm and SNR above 25 dB. The final network designs eliminated blind spots and supported up to 30 simultaneous users per AP, ensuring stable performance(Willyanto, 2023).

DISCUSSION

This section discusses the effectiveness of the wireless network design in meeting the technical and functional needs of libraries in Pamekasan Regency. The simulation results confirm that the proposed access point placement successfully eliminates signal blind spots and meets the expected coverage and performance standards.

The placement of dual-band access points based on building layout and user activity patterns ensured signal strength above -67 dBm and SNR levels above 25 dB at all three locations. This confirms the network's ability to support stable connections for digital services, aligning with the recommended parameters in wireless design best practices.

Each library has unique user behaviors and structural conditions. For instance, the university library experienced higher user density and required more access points to maintain performance, while the school library could operate effectively with fewer APs due to its smaller scale and consistent traffic. These findings reinforce the importance of adaptive design approaches that consider both physical infrastructure and user demand.

Challenges such as wall interference and uneven user distribution were mitigated by strategic AP placement and simulation-based adjustments. This shows that proper planning and technical tools can address most issues in public network deployment.

Overall, the design demonstrates flexibility and scalability, making it a valuable reference for similar institutions aiming to improve digital service accessibility.

CONCLUSION

This study has successfully designed a wireless network for three types of libraries in Pamekasan Regency, namely public libraries, school libraries, and campus libraries. Through a field survey-based approach, user needs analysis, and technical simulation using supporting software, the resulting network design is able to meet the standards of comfort in using internet access in terms of signal range, bandwidth capacity, and connection stability.

The network design at each location has been adjusted to the characteristics of the building and user traffic, resulting in optimal performance with an average signal above -67 dBm and SNR above 25 dB. The use of dual-band access points and strategic placement has proven to be able to overcome the problems of interference and uneven signal distribution.

The main contribution of this study lies in its comprehensive and adaptive approach to different types of libraries in the Pamekasan area. These results are expected to be a reference in designing wireless networks for similar institutions, as well as helping to improve the quality of digital information services for the community.

Suggestions for further research and implementation include:

There needs to be integration with a cloud-based network management system to facilitate network monitoring and maintenance.

Periodic evaluation of network traffic and service quality is needed to keep the system optimal.

Further development can include network security systems to protect user data privacy in public spaces.

ACKNOWLEDGMENT

The acknowledgments are given at the end of the research paper and should at a minimum name the sources of funding that contributed to the article. You may also recognize other people who contributed to the article or data contained in the article but at a level of effort that does not justify their inclusion as authors. You may also state the research grant contract number if any.

REFERENCES

Aditya Aji Pamungkas, Muhammad Rafli Krishnadanu Putra Wardana, Agung Dwi Oktavian, Dicky Febri Primadani, Dia Naufal Abiyyu Tsaqif, & Sholiq sholiq. (2024). Pengembangan Desain Pengalaman Pengguna Sistem Monitoring Pendaki Gunung Berbasis GPS dan LoRA dengan Metode Agile Scrum. *Bridge : Jurnal Publikasi Sistem Informasi Dan Telekomunikasi*, *2*(3), 39–53. https://doi.org/10.62951/bridge.v2i3.97

Agum, R. A., & Lela, N. (2023). Analisis Coverage Area Jaringan Wi-Fi Untuk Rumah di Kecamatan Cihampelas Menggunakan Metode Okumura Hatta. *Jurnal Ilmiah Wahana Pendidikan, Desember*, *24*, 1–8. https://doi.org/10.5281/zenodo.10403881

Ali. (2020). Transformasi Digital dalam Pendidikan Islam. In *Journal of Islamic Education* (Vol. 15, Issue 2). https://www.researchgate.net/profile/Romi-Siswanto/publication/384243695_TRANSFORMASI_DIGITAL_DALAM_PENDIDIKAN_PASCAPANDEMI_COVID_19/links/66f0bdcffc6cc46489703d9e/TRANSFORMASI-DIGITAL-DALAM-PENDIDIKAN-

E-ISSN : 2807-9035
Volume 5, **Number** 1, May 2025
https://doi.org/10.47709/brilliance.v5i1.5876

PASCAPANDEMI-COVID-19.pdf
Alifah, N. (2024). Pengujian Ping Spada Untirta Menggunakan Akses Internet Di Fkip - Untirta. *Jurnal Informatika Dan Teknik Elektro Terapan*, *12*(2). https://doi.org/10.23960/jitet.v12i2.4206
Alvirra, A. A., Fathiha, S. R., Arifin, D. Y., & ... (2024). EFEKTIVITAS PERPUSTAKAAN DIGITAL DALAM MENUNJANG PEMBELAJARAN BAHASA INDONESIA DI SMK NEGERI 6 SURAKARTA. *Buletin Literasi …*. https://journals2.ums.ac.id/blbs/article/view/6723
Amala, R., Mewengkang, A., & Djamen, A. C. (2023). Analisis dan Perancangan Jaringan Komputer di SMK Negeri 2 Bitung. In *Edutik : Jurnal Pendidikan Teknologi Informasi dan Komunikasi* (Vol. 3, Issue 2, pp. 260–269). ejurnal.unima.ac.id. https://doi.org/10.53682/edutik.v3i2.7033
Ananta, A., Nasir, M., & Erdiansyah, U. (2024). Smart Infusion Digitalization Based on IoT, Long-Range Communication, and Cloud. *Journal of Artificial Intelligence …*. https://e-jurnal.pnl.ac.id/JAISE/article/view/6135
Armyani, R. (2023). *PENGUKURAN KUALITAS PELAYANAN JARINGAN Wi-Fi MENGGUNAKAN PARAMETER QOS (QUALITY OF SERVICE) PADA UPT PERPUSTAKAN UIN AR- RANIRY BANDA ACEH*. repository.ar-raniry.ac.id. https://repository.ar-raniry.ac.id/id/eprint/35410/
Astarina, R., Akbar, L. A. S. I., & Budiman, D. F. (2024). Implementasi Routing Static Multi Hop Pada Perangkat LoRa. *Jurnal Informatika Dan Teknik Elektro Terapan*, *12*(3), 3393–3401. http://dx.doi.org/10.23960/jitet.v12i3.5228
BUDIMAN, B. (2024). *PENINGKATAN KEAMANAN JARINGAN WIRELESS DI FAKULTAS KEDOKTERAN MADANG UNSRI*. repository.binadarma.ac.id. http://repository.binadarma.ac.id/8458/
EH, A. P. (2024). *Perancangan Infrastruktur Jaringan Internet Pada Balai Pengembangan Kompetensi PUPR Wilayah II Palembang*. repo.palcomtech.ac.id. http://repo.palcomtech.ac.id/id/eprint/2164/1/PKL_IF_2024_AGUNG PRATAMA EH.pdf
Eka, P. A. (2022). Desain Dan Implementasi Wireless Roaming Pada Jaringan Kampus. In *… Wireless Roaming Pada Jaringan …*. eprints.binadarma.ac.id. http://eprints.binadarma.ac.id/14337/1/LAPORAN AKHIR_PDP_EKAPUJIAGUSTINI_ILMANUHRIYADI.pdf
Ependi, U. U. (2022). Optimasi Kinerja Jaringan Nirkabel Menggunakan Hierarchical Token Bucket. *Optimasi Kinerja Jaringan Nirkabel …*. http://eprints.binadarma.ac.id/14857/
Flomina, K., Hasanah, M., Febriani, W., & ... (2024). Pengembangan Infrastruktur Jaringan Komputer PNP PSDKU Solok Selatan Menggunakan Metode Network Development Life Cycle (NDLC). *JITSI: Jurnal Ilmiah …*. https://jurnal-itsi.org/index.php/jitsi/article/view/292
Gultom, H. R., Gea, A., Jaya, I. K., & Artikel, H. (2023). Implementasi Metode Simple Queue Dengan Teknik Burst Untuk Optimasi Penggunaan Wireless LAN Di SMK Negeri 1 Pangkalan Kerinci. *Jurnal Ilmiah Teknik Informatika*, *3*(1), 54–65. http://ojs.fikom-methodist.net/index.php/methotika
Haiqa, S. N. (n.d.). Analisis Daya Saing Daerah pada Pilar Infrastruktur dan Pilar Adopsi TIK di Indonesia. *Repository.Uinjkt.Ac.Id*. https://repository.uinjkt.ac.id/dspace/handle/123456789/80330%0Ahttps://repository.uinjkt.ac.id/dspace/bitstream/123456789/80330/1/11200150000100_SALMA NUR HAIQA.pdf
Hidayat, M. R., Saragih, R., Basuki, S., Charisma, A., & Setiawan, A. D. (2024). Implementasi Threat Mitigation Dan Traffic Policy Menggunakan Utm Pada Jaringan Tcp/Ip. *Jurnal Teknologi Informasi Dan Ilmu Komputer*, *11*(2), 437–446. https://doi.org/10.25126/jtiik.20241127528
Hidayatulloh, S. (2014). Analisis Dan Optimalisasi Keamanan Jaringan Menggunakan Protokol Ipsec. In *Jurnal Informatika* (Vol. 1, Issue 2). ejournal.unmus.ac.id. https://doi.org/10.31311/ji.v1i2.47
INDRAWATI, D. (2024). *MODEL OPTIMASI STASIUN PENGISIAN DAYA BERGERAK UNTUK KENDARAAN LISTRIK*. digilib.itb.ac.id. https://digilib.itb.ac.id/assets/files/2024/MjMyMjIzOTQgRFdJIEFHVVNUSU5BIEhFUlkgSU5EUkFXQVRJICgxKS5wZGY.pdf
Iqbal, M., Hartawan, L., & Nugraha, N. (2024). Perancangan dan Pembuatan Alat Sistem Monitoring Temperatur dan Kelembapan Greenhouse dengan Protokol ESP-NOW. *Jurnal Rekayasa Energi Dan …*. https://ejurnal.itenas.ac.id/index.php/JREM/article/view/12450
Istiqlalia, I. I., Fahriani, N., & Tantri, A. H. (2023). Analisis Kualitas Layanan Internet Wlan pada Salah Satu Perusahaan Yang Bergerak Dibidang Isp Dengan Menghitung Delay, Throughput, dan Packet Loss Untuk Mengidentifikasi Penyebab Hambatan Internet Bedasarkan Qos. *Prosiding-Seminar Nasional Teknologi Informasi & Ilmu Komputer (SEMASTER)*, *2*(1), 191–199. https://journal.unilak.ac.id/index.php/Semaster/article/view/18522
Jumadi, P., Parenreng, M., Wahid, A., & Yusmalasari, S. A. (2022). *Pengantar Jaringan Komunikasi Nirkabel Cv. Zt Corpora*. books.google.com. https://books.google.com/books?hl=en&lr=&id=kP6hEAAAQBAJ&oi=fnd&pg=PA159&dq=titik+akses+cakupan+jaringan+perpustakaan+desain+jaringan+nirkabel&ots=W5qe39CTKb&sig=roF4F6lk9Rs3wuhxPhvQXc8Ihog

E-ISSN : 2807-9035
Volume 5, **Number** 1, May 2025
https://doi.org/10.47709/brilliance.v5i1.5876

Kabenarang, J. H., Pardanus, R. H. W., & Parinsi, M. T. (2022a). Analisis dan Perancangan Jaringan Wireless Local Area Network di SMK. *Edutik : Jurnal Pendidikan Teknologi Informasi Dan Komunikasi*, *2*(3), 332–344. https://doi.org/10.53682/edutik.v2i3.5261

Kabenarang, J. H., Pardanus, R. H. W., & Parinsi, M. T. (2022b). Analisis dan Perancangan Jaringan Wireless Local Area Network di SMK. *Edutik : Jurnal Pendidikan Teknologi Informasi Dan Komunikasi*, *2*(3), 332–344. https://doi.org/10.53682/edutik.v2i3.5261

Kasatriyanto, B., & Ardy Wibowo, A. (2021). Borobudur Dalam Budaya Digital: Merancang Podcast Youtube Untuk Komunikasi Arkeologi Publik. In *Jurnal Konservasi Cagar Budaya* (Vol. 15, Issue 1, pp. 51–68). https://doi.org/10.33374/jurnalkonservasicagarbudaya.v15i1.250

Kominfo. (2020). Transformasi Digital. In *Kominfo next* (pp. 1–88). https://jdih.kominfo.go.id/monografi_hukum/monografi/t/majalah/34

Kusbastio, H. (2022). *Pengaruh harga dan kualitas layanan terhadap keputusan pembelian produk wifi Indihome: Studi pada PT. Telkom Cabang Sawojajar Malang Kota Jawa Timur (Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim).* etheses.uin-malang.ac.id. http://etheses.uin-malang.ac.id/id/eprint/43666

Lumbanraja, P. C., & Lumbanraja, P. L. (2024). *Tinjauan Sistematis: Transformasi Pelayanan Metrologi di Era Digital (Metrologi Digital4. 0)*. jurnal.kemendag.go.id. https://jurnal.kemendag.go.id/JCN/article/view/912

MEIYANDIE, F. (2023). *Pengaruh Pemanfaatan Situs Google Sebagai Sumber Belajar Terhadap Prestasi Siswa Mata Pelajaran Akuntansi Keuangan ….* repository.uin-suska.ac.id. http://repository.uin-suska.ac.id/71904/%0Ahttp://repository.uin-suska.ac.id/71904/2/SKRIPSI FAJRIANI MEIYANDIE.pdf

Memito, Q., Paen, P., Topologi, P., Di, J., Umamapu, S., Alfa, P., Lede, R. L., & Abineno, R. T. (2024). Pengembangan Topologi Jaringan Di SDI Umamapu. *Journal Islamic Global Network for Information Technology and Entrepreneurship*, *2*(1), 30–48. https://jurnal.stikes-ibnusina.ac.id/index.php/IGNITE/article/view/898

Meoerdijati. (2012). *Pengantar Ilmu Komunikasi*. repository.um.ac.id. https://repository.um.ac.id/5449/

Muhammad Ibrahim, Suryayusra, & Alex Wijaya. (2024). Analisis Perencanaan Pembangunan Jaringan Fiber Optik pada Pemerintahan Kota Palembang. *Sci-Tech Journal*, *3*(1), 74–82. https://doi.org/10.56709/stj.v3i1.388

MUJIB, A. (2023). Pengontrolan Sistem Atap JemuranOtomatis Berbasis Layanan Selular. *S1, Program Studi Tekologi Informasi, Universitas …*, 10–15. https://eprints.walisongo.ac.id/id/eprint/21988

Muntashir. (2022). Perpustakaan Sebagai Co-Working Space: Membangun Komunitas Para Digital Nomad. *Publication Library and Information Science (Universitas Negeri Islam Imam Bonjol)*, *6*(1), 28–43. https://journal.umpo.ac.id/index.php/PUBLIS/article/view/6005

Muttaqin, M., Simarmata, J., Syam, S., Aisa, S., Nurzaenab, N., Pandia, M., Puteri, A. N., Jalil, A., & Sihananto, A. N. (2024). *Pengantar Ilmu Komputer*. books.google.com. https://books.google.com/books?hl=en&lr=&id=YqclEQAAQBAJ&oi=fnd&pg=PP1&dq=titik+akses+cakupan+jaringan+perpustakaan+desain+jaringan+nirkabel&ots=Rtrd6ovXKQ&sig=SmAjKhkpfJG2pDELLro8Jnuc8kU

Naufal, H. A. (2021). Literasi Digital. In *Perspektif* (Vol. 1, Issue 2, pp. 195–202). academia.edu. https://doi.org/10.53947/perspekt.v1i2.32

Ningrum, A. N. P., & Sekti, B. A. (2024). Analisis Performa Dan Optimasi Bandwidth Jaringan Wifi Di Lingkungan Kampus. *Prosiding SISFOTEK*. http://seminar.iaii.or.id/index.php/SISFOTEK/article/view/474

Novita, S. (2024). *Perancangan Jaringan Wireless Access Point (WAP) Menggunakan Cisco Packet Tracer Dengan Metode Ppdioo Di SMK Muhammadiyah Banda Aceh*. repository.ar-raniry.ac.id. https://repository.ar-raniry.ac.id/id/eprint/40503/

Nugroho, B. M. (2022). *Analisis dan Simulasi Perancangan Wireless Distribution System (WDS) menggunakan Router Mikrotik pada SMAN 1 Kerumutan*. repository.uir.ac.id. https://repository.uir.ac.id/13890/

Prathama, A. J., Diaz, R. A. N., Santosa, I. M. A., & ... (2024). Pengembangan Infrastruktur Akses Internet Dan Sumber Daya Jaringan Untuk Pembelajaran Di SMPN 1 Rendang. *… Dan Bisnis STIKOM …*. https://spinter.stikom-bali.ac.id/index.php/spinter/article/view/401

Putra, M. B. D., & Setiawan, E. (2024). Metode Lexicon Based Untuk Analisis Sentimen Pengguna Twitter Terhadap Kinerja Isp. *JATI (Jurnal Mahasiswa Teknik …*. https://www.ejournal.itn.ac.id/index.php/jati/article/view/11765

Rindorindo, F. (2023). Rancang Bangun Aplikasi Pemetaan Kekuatan Jaringan Wi-Fi dan Monitoring Lalu Lintas Jaringan Berbasis Web Progresif (Studi Kasus : Jaringan Wi-Fi Fakultas Teknik Unsrat). *Jurnal Teknik Informatika*, *18*(1), 335–342. https://doi.org/10.35793/jti.v18i1.48439

ROSIKIN, S. (2024). *… Trainer Kit Pembelajaran Iot Untuk Praktikum Mata Kuliah Elektronika Digital Pada Mahasiswa Program Studi Pendidikan Fisika*. repository.radenintan.ac.id. http://repository.radenintan.ac.id/34669/%0Ahttp://repository.radenintan.ac.id/34669/1/SKRIPSI PERPUSTAKAAN.pdf

Santoso, J. T. (2023). Pengantar Manajemen Proyek Teknologi Informasi. In *Penerbit Yayasan Prima Agus Teknik*. digilib.stekom.ac.id. https://digilib.stekom.ac.id/assets/dokumen/ebook/feb_B86KON_sWQUrjJqdyUjB67yV7949c7hegTGg8T2EmAjSqN8G-X_WSps_1691655385.pdf

E-ISSN : 2807-9035
Volume 5, **Number** 1, May 2025
https://doi.org/10.47709/brilliance.v5i1.5876

Saputra, A. M. H. (2024). Desain Remote Control Boat Pada Autonomous Survace Vehicle (ASV). *EProceedings of Applied …*. https://openlibrarypublications.telkomuniversity.ac.id/index.php/appliedscience/article/view/25012

SARI, S. D. (2023). *RANCANG BANGUN SISTEM PEMANTAU KUALITAS UDARA MENGGUNAKAN PROTOKOL KOMUNIKASI DATA BERBASIS LoRa DENGAN TOPOLOGI TREE*. eprints.polsri.ac.id. http://eprints.polsri.ac.id/15882/

Saskara, G. A. J., Edy Listartha, I. M., Dharma Putra, I. P. S., & Arijaya Kusuma, K. A. (2024). Evaluasi Kualitas Jaringan Undiksha Harmoni dengan Menggunakan Metode Quality of Service. *Jurnal Teknologi Dan Informasi*, *14*(1), 50–61. https://doi.org/10.34010/jati.v14i1.11993

Setiawan, H. R. (2022). *Pembelajaran pendidikan agama Islam berbasis teknologi informasi*. publication.umsu.ac.id. https://publication.umsu.ac.id/index.php/ht/article/view/2004

Sistem, R., & Android, P. M. (2021). Sistem Keamanan Helm Berbasis Internet of Things dengan Fitur. In *Jurnal Resti* (Vol. 5, Issue 10, pp. 967–976). repository.polman-babel.ac.id. http://repository.polman-babel.ac.id/id/eprint/1166/1/Sistem Keamanan Helm Berbasis Internet of Things (Iot) dengan Layanan Akses Lokasi Mengguna.pdf

Slameta, Ashari, & Rahmatullah, G. M. (2023). Implementasi Purwarupa Aplikasi Komunikasi Menggunakan Jaringan Delay Tolerant Network Disertai Fleksibilitas Pemilihan Teknik Routing. *Tematik*, *10*(1), 61–67. https://doi.org/10.38204/tematik.v10i1.1263

Sudipa, I. G. I., Harto, B., Sahusilawane, W., Afriyadi, H., & ... (2023). *Teknologi Informasi &SDGs*. books.google.com. https://books.google.com/books?hl=en&lr=&id=FDC4EAAAQBAJ&oi=fnd&pg=PP1&dq=titik+akses+cakupan+jaringan+perpustakaan+desain+jaringan+nirkabel&ots=gx8DMlqvc5&sig=leeTdyLw8QGjS-Q9W56vWB_HPx8

Suhud, A. A. A. (2022). *Model Jaringan Mesh Pada Sistem Internet Of Things (Iot) Untuk Pemantauan Lingkungan*. repository.poliupg.ac.id. https://repository.poliupg.ac.id/id/eprint/8752/

Syahril, R., & ST, M. M. (2022). Analisis Penerapan Metode Link Layer Pada Radius Server Untuk Meningkatkan Kinerja Jaringan WLAN (Studi Kasus Perusahaan Pengguna Radius Server/Hotspot …. *... Untuk Meningkatkan Kinerja Jaringan …*. http://eprints.binadarma.ac.id/11923/%0Ahttp://eprints.binadarma.ac.id/11923/1/Jurnal penelitian pemula Ok TIMUR.pdf

Syakur, M. A., Anamisa, D. R., & Yusuf, M. (2017). Sistem Informasi Update Konsep, Riset dan Perkembangan. In *Media Nusa Creative (MNC Publishing)*. books.google.com. https://books.google.com/books?hl=en&lr=&id=SR1YEAAAQBAJ&oi=fnd&pg=PP1&dq=titik+akses+cakupan+jaringan+perpustakaan+desain+jaringan+nirkabel&ots=AQxFP39NWc&sig=odPaxw_6hXRROYhi4neRNl_qmfc

Teknik Mesin, J. (2023). *Desain Sistem Penggerak Webcam Pada Mobile Robot Search and Rescue Berbasis Android Nurkholis Majid 03051181924017 Program Studi Teknik Mesin*. repository.unsri.ac.id. https://repository.unsri.ac.id/130586/1/RAMA_21201_03051181924017.pdf

Teknologi, I., Bisnis, D. A. N., Sriwijaya, C. V, & Gemilang, M. (2023). *Optimalisasi Jaringan Wireless Pada*. repo.palcomtech.ac.id. http://repo.palcomtech.ac.id/id/eprint/1573/1/PKL_IF_2023_MELANI DWI PUTRI.pdf

Valendra, K., Tasmi, & Setiawan, C. (2024). Pengembangan Sistem Pendeteksi Kebisingan Otomatis Pada Perpustakaan Menggunkan Google Assistant Dan Esp32 Berbasis Voice Recognition. In *Journal of Intelligent Networks and IoT Global* (Vol. 2, Issue 1, pp. 8–17). ejournal.uigm.ac.id. https://doi.org/10.36982/jinig.v2i1.4436

Wahyuanto, E. (2024). PERADABAN DIGITAL: Pendekatan Manajemen Pendidikan dalam Transformasi Digital. In *AMU Press*. books.google.com. https://ejournal.amertamedia.co.id/index.php/press/article/view/284%0Ahttps://ejournal.amertamedia.co.id/index.php/press/article/download/284/174

Wibowo, A. (2024). TEORI &PRAKTIK JARINGAN KOMPUTER. *Penerbit Yayasan Prima Agus Teknik*. https://penerbit.stekom.ac.id/index.php/yayasanpat/article/view/495

Willyanto, A. F. (2023). *Alat Notifikasi Pesanan Kafe Menggunakan Wireless Dengan Model Komunikasi Point To Multipoint* (Issue 1). eprints.unisla.ac.id. http://eprints.unisla.ac.id/2324/

Wirawan, A. P., & Nugroho, H. (2023). Perancangan Node Sensor Nirkabel BLE Bertenaga Baterai menggunakan ESP32 untuk Aplikasi Pertanian Cerdas. *Telekontran : Jurnal Ilmiah Telekomunikasi, Kendali Dan Elektronika Terapan*, *11*(1), 12–22. https://doi.org/10.34010/telekontran.v11i1.9607

Yudistira, A., & Novita, D. (2022). Analisis Kepuasan Pengguna Aplikasi Arsip Digital Menggunakan Model End User Computing Satisfaction (EUCS). In *Jurnal Teknologi Sistem Informasi* (Vol. 3, Issue 2). repository.uinjkt.ac.id. https://doi.org/10.35957/jtsi.v3i2.3059