Dr. Ir. Fahmizal, S.T., M.Sc.

NIP : 111198807201609101
Jabatan Fungsional : Lektor
Bidang Keahlian : Robotika dan Teknik Kendali
E-mail : fahmizal@ugm.ac.id
AcadStaff UGM : https://acadstaff.ugm.ac.id/Fahmizal

Bidang Keahlian

Bidang keahlian yang ditekuni adalah Teknik Kendali dan Robotika, dengan fokus kompetensi keahlian pada pengembangan sistem kendali dan aplikasi robotik. Berkompeten dalam pengembangan algoritma kendali, pemrograman robot, serta penggunaan sensor dan aktuator dalam sistem otomasi. Selain itu memiliki fokus dalam pengaplikasian kendali dalam robotika, seperti UAV (Unmanned Aerial Vehicles) dan humanoid robot.

Pendidikan Formal

Tahun	Program	Bidang Ilmu	Perguruan Tinggi
2024	Insinyur	Teknik Elektro	Universitas Gadjah Mada (UGM) Yogyakarta
2019-2024	Doktoral	Teknik Elektro	Universitas Gadjah Mada (UGM) Yogyakarta
2012-2014	Master	Teknik Elektro	National Taiwan University of Science and Technology (NTUST) Taiwan
2006-2011	Sarjana	Teknik Elektro	Institut Teknologi Sepuluh Nopember (ITS) Surabaya

Pengalaman Penelitian

No	Tahun	Judul Penelitian	Sumber Dana
1	2024	Perancangan Pemetaan Jalur Pergerakan Differential Drive Mobile Robot menggunakan Robot Operating System (ROS)	Dana penelitian masyarakat Sekolah Vokasi UGM
2	2019	Rancang Bangun Platform Rumah Pintar Berbasis Internet of Things (IoT) sebagai Upaya Making Indonesia 4.0	LPPM-UGM Hibah Bersaing Penelitian Dosen Muda UGM
3	2018	Perancangan Sistem Cerdas pada Purwarupa Robot Self-driving Car menggunakan Convolutional Neural Network dan Road Lane Detector	Dana penelitian masyarakat Sekolah Vokasi UGM
4	2015	Rancang Bangun Modul Praktikum Teknik Kendali dengan Studi Kasus pada Identifikasi Sistem Motor-DC berbasis Arduino-Simulink Matlab	Dana penelitian masyarakat Sekolah Vokasi UGM

5	2015	Rancang Bangun Purwarupa Robot Mainland Surveillance menggunakan Mecanum Wheel sebagai Sarana Tentara Nasional Republik Indonesia dalam Membantu Kedaulatan Darat Indonesia	LPPM-UGM Hibah Bersaing Penelitian Dosen Muda UGM

Pengalaman Pengabdian

No	Tahun	Judul Kegiatan	Sumber Dana
1	2024	Pelatihan Advanced Arduino untuk SMK Kulonprogo	Sekolah Vokasi, UGM
2	2024	Pengembangan Keterampilan Vokasional Siswa SMA-SMK di Kulon Progo Melalui Pelatihan Desain Cad dan Laser Cutting	Sekolah Vokasi, UGM
3	2019	Pengenalan Teknologi Instrumentasi dan Robotika untuk Siswa Sekolah Menengah Atas di Wilayah Kabupaten Kulon Progo Yogyakarta	Sekolah Vokasi, UGM
4	2018	Pengenalan Teknologi Instrumentasi dan Robotika untuk Siswa Sekolah Menengah Atas di Wilayah Wonosobo Yogyakarta	Sekolah Vokasi, UGM
5	2018	Pengenalan Robotika untuk Industri Bagi Siswa Sekolah Menengah Kejuruan di Wilayah Klaten Jawa	Sekolah Vokasi, UGM
6	2015	Pelatihan mikrokontroller (Arduino) untuk Sekolah Menengah Kejuruan (SMK) di Kabupaten Kulon Progo Yogyakarta	Sekolah Vokasi, UGM

Daftar Publikasi

1 Jurnal Internasional

[1] Fahmizal, H. A. Nugroho, A. I. Cahyadi, and I. Ardiyanto, "Attitude control of UAV bicopter using adaptive LQG," *Results in Control and Optimization*, vol. 17, p. 100 484, Dec. 2024, ISSN: 26667207. DOI: 10.1016/j.rico.2024.100484.

[2] Fahmizal, Hanung Adi Nugroho, Adha Imam Cahyadi, and I. Ardiyanto, "Trajectory Tracking Control of Quadrotor using LQ-Servo Control with SimMechanics," *Evergreen*, vol. 10, no. 4, pp. 2412–2422, Dec. 2023, ISSN: 2189-0420, 2432-5953. DOI: 10.5109/7160931.

[3] Fahmizal, H. A. Nugroho, A. I. Cahyadi, and I. Ardiyanto, "Fuzzy logic controller for stabilizing the rolling movement of uav bicopter," *ICIC Express Letters*, vol. 17, no. 9, pp. 967–978, 2023. DOI: 10.24507/icicel.17.09.967.

[4] A. Mayub, Fahmizal, M. Shidiq, U. Y. Oktiawati, and N. R. Rosyid, "Implementation of smart home using internet of things," *TELKOMNIKA (Telecommunication, Computing, Electronics and Control)*, vol. 17, no. 6, pp. 3126–3136, 2019. DOI: 10.12928/telkomnika.v17i6.11722.

[5] A. Mayub and Fahmizal, "Center of pressure feedback for controlling the walking stability bipedal robots using fuzzy logic controller," *International Journal of Electrical and Computer Engineering*, vol. 8, no. 5, p. 3678, 2018. DOI: 10.11591/ijece.v8i5.pp3678-3696.

[6] C.-H. Kuo, Fahmizal, and S.-L. Wu, "Development of fuzzy logic controllers for controlling bipedal robot locomotion on uneven terrains with imu feedbacks," *Indian Journal of Science and Technology*, vol. 9, p. 28, 2016. DOI: 10.17485/ijst/2016/v9i28/98449.

2 Jurnal Nasional

[1] Fahmizal, M. S. Pratikno, H. N. Isnianto, A. Mayub, H. Maghfiroh, and P. Anugrah, "Control and Navigation of Differential Drive Mobile Robot with PID and Hector SLAM: Simulation and Implementation," *Jurnal Ilmiah Teknik Elektro Komputer dan Informatika*, vol. 10, no. 3, pp. 594–607, 2024.

[2] Fahmizal et al., "Path Planning for Mobile Robots on Dynamic Environmental Obstacles Using PSO Optimization," *Jurnal Ilmiah Teknik Elektro Komputer dan Informatika*, vol. 10, no. 1, pp. 166–172, 2024.

[3] Fahmizal, A. Priyatmoko, and A. Mayub, "Implementasi kinematika trajectory lingkaran pada robot roda mecanum," *Jurnal Listrik, Instrumentasi, dan Elektronika Terapan*, vol. 3, no. 1, 2022.

[4] M. Arrofiq, L. S. Nugroho, Fahmizal, and E. Apriaskar, "Sistem kendali eddy current brakes dinamometer menggunakan linear quadratic regulator (lqr)," *ELKOMIKA: Jurnal Teknik Energi Elektrik, Teknik Telekomunikasi, & Teknik Elektronika*, vol. 9, no. 4, p. 923, 2021.

[5] N. Sulistyawati, Fahmizal, and I. Nathasya, "Kendali kecepatan motor dc dengan buck converter menggunakan full state feedback-pole placement," *ELKOMIKA: Jurnal Teknik Energi Elektrik, Teknik Telekomunikasi, & Teknik Elektronika*, vol. 9, no. 2, p. 415, 2021.

[6] E. Apriaskar, Fahmizal, I. Cahyani, and A. Mayub, "Autonomous mobile robot based on behaviourbased robotic using v-rep simulator–pioneer p3-dx robot," *Jurnal Rekayasa Elektrika*, vol. 16, no. 1, 2020.

[7] F. Hasan, B. B. Murti, Fahmizal, and M. Arrofiq, "Kendali heading pada trajectory tracking miniatur robot mobil," *Jurnal Listrik, Instrumentasi, dan Elektronika Terapan*, vol. 1, no. 2, 2020.

[8] L. K. N. Imani, N. Alicia, Fahmizal, and U. Y. Oktiawati, "Implementasi sistem pengendali rumah pintar menggunakan laravel," *Jurnal Listrik, Instrumentasi, dan Elektronika Terapan*, vol. 1, no. 1, 2020.

[9] A. Mayub, I. Syahroni, Fahmizal, and M. Arrofiq, "Kinematika dan antarmuka robot scara serpent," *ELKOMIKA: Jurnal Teknik Energi Elektrik, Teknik Telekomunikasi, & Teknik Elektronika*, vol. 8, no. 3, p. 561, 2020.

[10] B. B. Murti, T. Sarwono, E. Apriaskar, and Fahmizal, "Desain robot holonomic berbasis roda mecanum dengan arm manipulator," *Jurnal Rekayasa Elektrika*, vol. 16, no. 3, 2020.

[11] E. Apriaskar, Fahmizal, N. A. Salim, and D. Prastiyanto, "Performance evaluation of balancing bicopter using p, pi, and pid controller," *Jurnal Teknik Elektro*, vol. 11, no. 2, pp. 44–49, 2019.

[12] Fahmizal, M. Arrofiq, R. Adrian, and A. Mayub, "Robot inverted pendulum beroda dua (ipbd) dengan kendali linear quadratic regulator (lqr)," *ELKOMIKA: Jurnal Teknik Energi Elektrik, Teknik Telekomunikasi, & Teknik Elektronika*, vol. 7, no. 2, p. 224, 2019.

[13] Fahmizal, T. R. Orlando, B. B. Murti, M. Budiyanto, and A. Mayub, "Kendali logika fuzzy pada sistem electronic control unit (ecu) air conditioner mobil," *J. Teknol. Inf. dan Ilmu Komput*, vol. 6, no. 1, p. 25, 2019.

[14] Fahmizal, D. U. Rijalussalam, A. Mayub, et al., "Trajectory tracking pada robot omni dengan metode odometry," *Jurnal Nasional Teknik Elektro dan Teknologi Informasi*, vol. 8, no. 1, pp. 35–44, 2019.

[15] R. Adrian, Fahmizal, and N. R. Rosyid, "Peningkatan kualitas jaringan pada vehicle ad-hoc network menggunakan algoritma simple k-means," *Techno. Com*, vol. 17, no. 3, pp. 281–289, 2018.

[16] Fahmizal, M. Arrofiq, and A. Mayub, "Identifikasi pemodelan matematis robot wall following," *Jurnal Nasional Teknik Elektro dan Teknologi Informasi*, vol. 7, no. 1, pp. 79–88, 2018.

[17] Fahmizal, G. Y. Dewantama, D. B. Pratama, F. Fathuddin, and Winarsih, "Rancang bangun sistem penstabil kamera (gimbal) dengan logika fuzzy untuk pengambilan gambar foto dan video," *Jurnal Teknologi Informasi dan Ilmu Komputer*, vol. 5, no. 3, pp. 277–286, 2018.

[18] Fahmizal, A. Mayub, and M. Arrofiq, "Sistem gerak robot mainland surveillance menggunakan mecanum wheel sebagai militer robot," *Majalah Ilmiah Teknologi Elektro*, vol. 17, no. 2, p. 205, 2018.

[19] Fahmizal, B. B. Murti, D. B. Pratama, and A. Mayub, "Kendali logika fuzzy pada car like mobile robot (clmr) penjejak garis," *ELKOMIKA: Jurnal Teknik Energi Elektrik, Teknik Telekomunikasi, & Teknik Elektronika*, vol. 6, no. 3, p. 451, 2018.

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[21] A. Surriani, M. Arrofiq, and Fahmizal, "Pemodelan forward kinematic dan inverse kinematic robot berlengan puma 560," *Jurnal Ilmiah Teknik Elektro Komputer dan Informatika (JITEKI)*, vol. 4, no. 2, 2018.

[22] Fahmizal, G. Setyawan, M. Arrofiq, and A. Mayub, "Logika fuzzy pada robot inverted pendulum beroda dua," *J. Teknol. Inf. Dan Ilmu Komput*, vol. 4, no. 4, p. 244, 2017.

3 Seminar Internasional dan Nasional

[1] E. Apriaskar, D. Prastiyanto, A. A. Manaf, I. Amelia, and Fahmizal, "Multi-criteria genetic algorithm optimization approach for balancing bicopter control," in *IOP Conference Series: Earth and Environmental Science*, IOP Publishing, vol. 1203, 2023, p. 012 027.

[2] Fahmizal, H. A. Nugroho, A. I. Cahyadi, and I. Ardiyanto, "Tuning lqr parameters using neuro evolution of augmenting topologies (neat) on a double pendulum cart," in *2022 11th Electrical Power, Electronics, Communications, Controls and Informatics Seminar (EECCIS)*, IEEE, 2022, pp. 270–275.

[3] Fahmizal, H. A. Nugroho, A. I. Cahyadi, and I. Ardiyanto, "Twin rotor mimo system control using linear quadratic regulator with simechanics," in *2021 7th International Conference on Electrical, Electronics and Information Engineering (ICEEIE)*, IEEE, 2021, pp. 301–306.

[4] U. Y. Oktiawati et al., "Development of monitoring system of furnace temperature for fire resistance test," in *2021 International Conference on Electrical, Communication, and Computer Engineering (ICECCE)*, IEEE, 2021, pp. 1–6.

[5] E. Apriaskar, Fahmizal, and M. Fauzi, "Robotic technology towards industry 4.0: Automatic object sorting robot arm using kinect sensor," in *Journal of Physics: Conference Series*, IOP Publishing, vol. 1444, 2020, p. 012 030.

[6] Fahmizal, M. Arrofiq, E. Apriaskar, and A. Mayub, "Rigorous modelling steps on roll movement of balancing bicopter using multi-level periodic perturbation signals," in *2019 6th International Conference on Instrumentation, Control, and Automation (ICA)*, IEEE, 2019, pp. 52–57.

[7] Fahmizal, A. Priyatmoko, E. Apriaskar, and A. Mayub, "Heading control on differential drive wheeled mobile robot with odometry for tracking problem," in *2019 International Conference on Advanced Mechatronics, Intelligent Manufacture and Industrial Automation (ICAMIMIA)*, IEEE, 2019, pp. 47–52.

[8] Fahmizal and A. Mayub, "Vobiro-vocational bipedal robot platform, kinematic and locomotion control," in *2018 10th International Conference on Information Technology and Electrical Engineering (ICITEE)*, IEEE, 2018, pp. 1–6.

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[10] B. T. Nugraha, S.-F. Su, and Fahmizal, "Towards self-driving car using convolutional neural network and road lane detector," in *2017 2nd international conference on automation, cognitive science, optics, micro electro-mechanical system, and information technology (ICACOMIT)*, IEEE, 2017, pp. 65–69.

[11] Fahmizal and C.-H. Kuo, "Trajectory and heading tracking of a mecanum wheeled robot using fuzzy logic control," in *2016 International Conference on Instrumentation, Control and Automation (ICA)*, IEEE, 2016, pp. 54–59.

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[13] Fahmizal and C.-H. Kuo, "Development of a fuzzy logic wall following controller for steering mobile robots," in *2013 International Conference on Fuzzy Theory and Its Applications (iFUZZY)*, IEEE, 2013, pp. 7–12.

4 Buku

[1] Fahmizal, A. Mayub, R. Agustiawan, and D. T. Utami, *Mudah Belajar Desain Gambar Teknik Mekanika dengan Autodesk Inventor Student Version*. Media Sains Indonesia, 2023.

[2] Fahmizal, A. Mayub, M. Arrofiq, and F. Ruciyanti, *Mudah Belajar Arduino dengan Pendekatan berbasis Fritzing, Tinkercad dan Proteus*. Deepublish, 2022.

[3] Fahmizal, A. Mayub, D. T. Utami, and Chairadeya, *Mudah Belajar Desain Printed Circuit Board (PCB) Perangkat Elektronika Menggunakan Autodesk EAGLE dan Fusion360 Student Version*. Deepublish, 2022.

Kekayaan Intelektual

No	Tahun	Jenis	Judul
1	2023	Hak Cipta	Sistem Monitoring Suhu Tungku
2	2019	Hak Cipta	Kompilasi ciptaan/data https://otomasi.sv.ugm.ac.id

Penghargaan

No	Tahun	Award
1	2021	**Sertifikasi Dosen Professional**. Awarded by DIKTI.
2	2019 - 2023	**Beasiswa Pendidikan Pascasarjana Dalam Negeri** (BPPDN)
3	2019	**Dosen Muda Berprestasi**, Awarded by Dean of Vocational College UGM, Wikan Sakarinto, Ph.D.
4	2012 - 2014	**Beasiswa Master Degree**, National Taiwan University of Science and Technology

Tautan Pribadi

- PDDikti : Klik disini
- GitHub : Klik disini
- LinkedIn : Klik disini
- YouTube : Klik disini
- WordPress : Klik disini
- Google Scholar : Klik disini
- Sinta ID : Klik disini