

Curriculum Vitae

Heri Purnawan

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in Heri Purnawan



Research Interests

Differential Equation	Numerical Analysis	Numerical Optimization
Estimation	Optimal Control	Model Predictive Control
Dynamical System	System Identification	Machine Learning

Work Experiences

- 2022 – now **Lecturer**, Department of Electrical Engineering, Universitas Islam Lamongan, Lamongan.
- 2016 – 2018 **Math Tutor**, Indonesia College, Surabaya.
- 2016 – 2017 **Lecturer Assistant**, Calculus 1 & 2, Institut Teknologi Sepuluh Nopember, Surabaya.
- 2015 – 2016 **Mathematical Olympiad Coach**, Junior High School 1, Sugio, Lamongan.
- 2014 **Internship Program**, Aeronautics Technology Center, National Institute of Aeronautics and Space (LAPAN), Bogor.
Project title: *Modeling and Simulation of Lapan Surveillance UAV (LSU)-05.*

Education

- 2020 – 2024 **Ph.D., Institut Teknologi Sepuluh Nopember** in Applied Mathematics.
Thesis title: *Disturbance Observer-based Stochastic Model Predictive Control Design for Systems with Parameter Uncertainties and Disturbances.*
Supervisor: Prof. Subchan, S.Si, M.Sc, Ph.D (Mathematics, ITS)
Co-supervisors: Dr. Tahiyatul Asfihani, S.Si, M.Si (Mathematics, ITS)
Prof. Seungkeun Kim, Ph.D (Aerospace Engineering, CNU)
- 2016 – 2018 **M.Sc., Institut Teknologi Sepuluh Nopember** in Applied Mathematics.
Thesis title: *Disturbance Compensating Model Predictive Control for Warship Heading Control in Missile Firing Mission.*
Supervisors: Subchan, S.Si, M.Sc, Ph.D (Mathematics, ITS)
Dr. Dieky Adzkiya, S.Si, M.Si (Mathematics, ITS)
- 2011 – 2015 **B.Sc., Institut Teknologi Sepuluh Nopember** in Applied Mathematics.
Thesis title: *Linear Quadratic Regulator (LQR) for Flight Stability of LSU-05.*
Supervisors: Dr. Dra. Mardijah, MT (Mathematics, ITS)
Ir. Eko Budi Purwanto, MT (Aerospace Technology Center, LAPAN)

Research Publications

Journal Articles

- H. Purnawan**, T. Asfihani, S. Kim, and S. Subchan, “Model predictive control design under stochastic parametric uncertainties based on polynomial chaos expansions for f-16 aircraft,” *Journal of Robotics and Control (JRC)*, vol. 5, no. 3, pp. 723–732, 2024.

- 2 R. A. Faroh, **H. Purnawan**, and M. M. Junaidi, "Tingkat depresi, stres, dan kecemasan mahasiswa teknik elektro selama pembelajaran daring," *Tarbiyah Wa Ta'lim: Jurnal Penelitian Pendidikan dan Pembelajaran*, vol. 10, no. 1, pp. 1–11, 2023.
- 3 **H. Purnawan**, R. A. Faroh, M. H. Wahyudi, and S. Cahyaningtias, "Optimal control with treatment and water sanitation for cholera epidemic model," *EKSAKTA: Berkala Ilmiah Bidang MIPA*, vol. 23, no. 03, pp. 373–381, 2023.
- 4 **H. Purnawan**, U. Ilmi, R. A. Faroh, and F. Resmi, "Moving horizon state estimation with application to autonomous vehicle," *Inprime: Indonesian Journal of Pure and Applied Mathematics*, vol. 5, no. 1, pp. 47–59, 2023.
- 5 **H. Purnawan** and S. Subiono, "Barisan aritmetika bertingkat dengan menggunakan interpolasi lagrange," *Limits: Journal of Mathematics and Its Applications*, vol. 19, no. 2, pp. 145–154, 2022.
- 6 N. Ilmayasinta and **H. Purnawan**, "Optimal control in a mathematical model of smoking," *Journal of Mathematical & Fundamental Sciences*, vol. 53, no. 3, 2021.
- 7 **H. Purnawan**, S. Subchan, D. Adzkiya, and T. Asfihani, "Trajectory tracking of coordinated multi-robot systems using nonlinear model predictive control," *Nonlinear Dynamics and System Theory*, vol. 21, no. 3, pp. 303–314, 2021.

Conference Proceedings

- 1 **H. Purnawan**, T. Asfihani, S. Kim, and S. Subchan, "Stochastic model predictive control for flight path angle tracking of f-16 aircraft based on polynomial chaos," in *2024 International Seminar on Intelligent Technology and Its Applications (ISITIA)*, IEEE, 2024, pp. 599–604.
- 2 S. Subchan, L. R. Amalia, T. Asfihani, and **H. Purnawan**, "Reference tracking of quadrotor using modified nonlinear model predictive control based on nonlinear disturbance observer," in *International Conference on Mathematics: Pure, Applied and Computation*, Springer, 2023, pp. 87–104.
- 3 U. Ilmi and **H. Purnawan**, "Study on the problems of particle dynamics and rigid bodies (mechanical engineering field) and electrical circuits (electrical engineering)," in *Proceeding International Conference on Environment Health, Socioeconomic and Technology*, vol. 1, 2022, pp. 213–226.
- 4 **H. Purnawan**, T. Asfihani, and S. Subchan, "Disturbance observer model predictive control with application to uav pitch angle control," in *AIP Conference Proceedings*, AIP Publishing, vol. 2641, 2022.
- 5 **H. Purnawan**, U. Ilmi, R. A. Faroh, and A. B. A. A. Rizqi, "Positioning estimation of autonomous car using extended kalman filter," in *Proceeding International Conference on Environment Health, Socioeconomic and Technology*, vol. 1, 2022, pp. 96–102.
- 6 **H. Purnawan**, T. Asfihani, D. Adzkiya, *et al.*, "Disturbance compensating model predictive control for warship heading control in missile firing mission," in *Journal of Physics: Conference Series*, IOP Publishing, vol. 1108, 2018, p. 012 035.
- 7 **H. Purnawan**, T. Asfihani, D. Adzkiya, *et al.*, "Mathematical modeling and simulation of missile firing impact force on warship," in *2018 International Seminar on Research of Information Technology and Intelligent Systems (ISRITI)*, IEEE, 2018, pp. 566–570.
- 8 T. Asfihani, D. Adzkiya, D. M. Rosyid, **H. Purnawan**, R. Kamilah, *et al.*, "Estimation of the corvette sigma motion in missile firing mission," in *2017 5th International Conference on Instrumentation, Control, and Automation (ICA)*, IEEE, 2017, pp. 203–207.
- 9 **H. Purnawan**, E. B. Purwanto, *et al.*, "Design of linear quadratic regulator (lqr) control system for flight stability of lsu-05," in *Journal of Physics: Conference Series*, IOP Publishing, vol. 890, 2017, p. 012 056.

Skills

Languages	Indonesia, English.
Coding	Matlab, C, C++.
Misc.	Academic research, teaching, training, consultation, \LaTeX typesetting.

Miscellaneous Experience

Awards and Achievements

2023	Indonesian Education Scholarship (BPI) , Doctoral Study Completion (partially), the Ministry of Education, Culture, Research and Technology (KEMENDIKBUDRISTEK).
2022	Postgraduate Scholarship for Researcher (BPUP) , Doctoral's Degree, Institut Teknologi Sepuluh Nopember.
2021	Postgraduate Scholarship for Researcher (BPUP) , Doctoral's Degree, Institut Teknologi Sepuluh Nopember.
2020	Postgraduate Scholarship for Researcher (BPUP) , Doctoral's Degree, Institut Teknologi Sepuluh Nopember.
2018	Graduated Cumlaude , Master's Degree, Institut Teknologi Sepuluh Nopember.
2016 – 2018	Fresh Graduate Scholarship , Master's Degree, Institut Teknologi Sepuluh Nopember.
2015	Graduated Cumlaude , Bachelor's Degree, Institut Teknologi Sepuluh Nopember.
2011 – 2015	Bidik Misi Scholarship , Bachelor's Degree, Institut Teknologi Sepuluh Nopember.

Certification

2023	Certified PEKERTI Training , Awarded by the Directorate of Innovation and Educational Development (DIPP), Universitas Airlangga, Surabaya.
2022	Certified Data Scientist Training , Professional Academy Program. Awarded by the Ministry of Communication and Information Technology (KOMINFO), Indonesia.

References

Prof. Subchan, Ph.D.

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ITS Campus, Keputih, Sukolilo-Surabaya 60111.
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Dr. Dieky Adzkiya, M.Si.

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