Yang-Rui Li

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Research Interests

Dynamics Modeling	🔖 Nonlinear Systems: DC Motor, Robot Arm, **Quadrotor**, …
System Identification	🔖 DC Motor, Robot Arm, **Quadrotor**
Navigation ans Signal Processing	🔖 AHRS, GNSS-INS Fusion, Pose-Sensor-INS Fusion
Nonlinear Control Design	🔖 **Advanced PID**, **Sliding Mode Control**, Backstepping Control, Adaptive Control.

Education

Feb. 2021 – Jan. 2026 (expected)	🔖 **Ph.D., Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan.**
Sep. 2019 – Jan. 2021	🔖 **M.S., Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan.**
Sep. 2012 – Jun. 2019	🔖 **B.S., Department of Aerospace Engineering, Tamkang University, New Taipei City, Taiwan.**

Research Publications

Journal Articles

1. **Y.-R. Li**, C.-C. Chen, and C.-C. Peng, "Integral Backstepping Control Algorithm for a Quadrotor Positioning Flight Task: A Design Issue Discussion," en, *Algorithms*, vol. 16, no. 2, p. 122, Feb. 2023, Number: 2 Publisher: Multidisciplinary Digital Publishing Institute, ISSN: 1999-4893. 🔗 DOI: 10.3390/a16020122. (visited on 08/06/2023).

2. **Y.-R. Li** and C.-C. Peng, "Development of a Full Orientation Flight Robotics: Dynamics Modeling, Analysis, and Control Design," en, *IEEE Access*, vol. 11, pp. 110 234–110 244, 2023, ISSN: 2169-3536. 🔗 DOI: 10.1109/ACCESS.2023.3321651. (visited on 05/13/2024).

3. **Y.-R. Li** and C.-C. Peng, "Encoder position feedback based indirect integral method for motor parameter identification subject to asymmetric friction," en, *International Journal of Non-Linear Mechanics*, vol. 152, p. 104 386, Jun. 2023, ISSN: 00207462. 🔗 DOI: 10.1016/j.ijnonlinmec.2023.104386. (visited on 08/06/2023).

4. **Y.-R. Li**, C.-C. Peng, and J.-N. Juang, "An integral method for parameter identification of a nonlinear robot subject to quantization error," en, *Nonlinear Dynamics*, vol. 111, no. 24, pp. 22 419–22 441, Dec. 2023, ISSN: 1573-269X. 🔗 DOI: 10.1007/s11071-023-09027-z. (visited on 05/13/2024).

5. C.-C. Peng and **Y.-R. Li**, "Parameters identification of nonlinear Lorenz chaotic system for high-precision model reference synchronization," English, *Nonlinear Dynamics*, vol. 108, no. 2, pp. 1733–1754, Apr. 2022, Num Pages: 1733-1754 Place: Dordrecht, Netherlands Publisher: Springer Nature B.V., ISSN: 0924090X. 🔗 DOI: 10.1007/s11071-021-07156-x. (visited on 05/13/2024).

6. **Y.-R. Li** and C.-C. Peng, "Super-Twisting Sliding Mode Control Law Design for Attitude Tracking Task of a Spacecraft via Reaction Wheels," en, *Mathematical Problems in Engineering*, vol. 2021, H. Du, Ed., pp. 1–13, Mar. 2021, ISSN: 1563-5147, 1024-123X. 🔗 DOI: 10.1155/2021/6644033. (visited on 08/06/2023).

Skills

Programming Languages	▮	**Matlab/Simulink, C/C++, Arduino, LaTeX**
Engineering Tools	▮	**Linux (Ubuntu), ROS2, PlatformIO**
Languages	▮	Mandarin (native), English (medium)

References

Chao-Chung Peng	▮	Professor, Department of Aeronautics and Astronautics, National Cheng Kung University, Tainan, Taiwan, ccpeng24@gmail.com
Jer-Nan Juang	▮	Emeritus Professor, Department of Engineering Science, National Cheng Kung University, Tainan, Taiwan. jjuang@ncku.edu.tw