Thilina H. Weerakkody

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Professional Summary

Versatile data analyst and engineer with a Ph.D. in Mechanical Engineering and deep experience in robotics, control systems, and data acquisition. Strong background in sensor integration, signal processing, and data-driven modeling. Passionate about solving complex problems with data, developing robust automation workflows, and creating actionable insights from real-world experiments.

Technical Skills

Languages:	Python, MATLAB, C/C++, SQL, Julia
Data Tools:	Pandas, NumPy, Matplotlib, scikit-learn, TensorFlow (basic)
Visualization:	Tableau, Seaborn, Excel
Tools:	Git, Jupyter, LabVIEW, ROS, LaTeX
Hardware:	Arduino, Raspberry Pi, Teensy, OpenBCI
CAD/Simulation:	SolidWorks, Fusion 360, COMSOL, MATLAB/Simulink

Selected Projects

High-Throughput Radiochemistry Imaging System – UCLA Developed LabVIEW-controlled robotic imaging platform with automated image acquisition, bin file storage, and metadata logging. Parsed XML configurations to optimize imaging workflows and integrate sensor-based decision logic.

Adaptive Control for SMA-based Systems – University of Iowa Modeled nonlinear, hysteretic behaviors in shape memory actuators. Applied $\mathcal{L}_1$ adaptive control strategies and visualized system response using MATLAB. Analyzed time-series datasets for actuator performance under varying conditions.

Professional Experience

Postdoctoral Research Scholar – UCLA 2024–Present
Led automation of high-throughput radiochemistry systems. Created scalable data pipelines for experimental imaging workflows using Python, LabVIEW, and embedded control. Developed documentation for reproducibility.

Graduate Research Assistant – University of Iowa 2019–2024
Developed adaptive control and data acquisition systems for soft robotics. Designed control logic, conducted experimental validation, and processed actuator data. Employed signal filtering, regression modeling, and multibody simulation.

Education

Ph.D. in Mechanical Engineering, University of Iowa, IA 2019–2024
Dissertation: Design and Control of Artificial Muscles for Robotic Applications

B.Sc. (Hons.) in Mechanical Engineering, University of Moratuwa, Sri Lanka 2011–2016

Diploma in Information Technology, British Computer Society (UK) 2012–2014

Certifications

- Google Data Analytics Professional Certificate – Coursera

Publications (Selected)

- Weerakkody, T.H. et al., "Modeling and control of twisted and coiled artificial muscles", *Meccanica*, 2023.
- Weerakkody, T.H. et al., "Robust and adaptive sampled-data control...", *IEEE Control Systems Letters*, 2021.

Additional Information

Citizenship: Sri Lankan
Visa: F-1 OPT (STEM Eligible)
Languages: English (Fluent), Sinhala (Native)

Last Updated – June 15, 2025