



Name: Dr. Pritesh Narayan
Rank: Associate Professor - School of Aviation

Personal Information

Nationality: British
AU Joining Date: 24/08/2025
E-Mail Address: p.narayan@au.edu.kw

Professional Information

Education:	Qualification: Doctor of Philosophy (PhD) Thesis Title: <i>Embedding human expert cognition and real-time trajectory planning in autonomous UAS</i> University: Queensland University of Technology, Australia Year: 2012
	Qualification: Postgraduate Certificate (PGCert) Major: Business Administration (Merit) University: University of the West of England, United Kingdom Year: 2023
	Qualification: Postgraduate Certificate (PGCert) Major: Teaching and Learning in Higher Education (Merit) University of the West of England, United Kingdom Year: 2013
	Qualification: Bachelor of Engineering (BEng) Major: Aerospace Avionics (First Class Honours / GPA. 6.5 out of 7) University: Queensland University of Technology, Australia

	Year: 2012 License: Private Pilot License (instrument rated) Authority: Federal Aviation Administration (FAA) Year: 2016
Specialization:	• Uncrewed Aerial Vehicle (UAV) Autonomy • UAV Guidance, Navigation and Control • Aerospace Modelling and Simulation
Current Academic Position:	Associate Professor - School of Aviation
Current Professional Positions:	Member of Institution of Engineering Technology (IET)
Previous Administrative Position Held:	2024-2025 Deputy Head of School - Aviation and Security, Buckinghamshire New University, United Kingdom.
Previous Academic Positions Held:	2024-2025 Buckinghamshire New University, United Kingdom 2012 - 2022 University of the West of England, United Kingdom
Fellowships And Honors:	Chartered Engineer, Institution of Engineering and Technology (IET) Fellow of the UK Higher Education Academy (FHEA)
Teaching Experience:	Courses Taught: Security in Aviation, Globalised Aviation Industry, Flight Test and Airworthiness, Flight Mechanics and Dynamics, Aircraft Systems, Avionics and Control, Introduction to Aeronautics
Industrial And Technical Experience:	2023-2024 System Engineer and Aerospace Product Focal, Insitu Pacific (Boeing), Australia 2009-2010 Research Scientist, Queensland University of Technology, Australia 2005-2006 Graduate System Engineer, Boeing Defence Australia
Research Interest:	• Emerging air transport technologies such as Urban Air Mobility • Intelligent aerial surveillance to enhance aviation security • Enhancement of aircraft navigation systems to improve safety and sustainability within aviation
Research Grants:	Research Title: Application of Wireless Sensor Networks for Surveillance and enhancing security of Critical Infrastructure such as airports. Research Funding: TSB (now InnovateUK) Grant: Approximately £93,000 for 1 year, 2014 Role: Co-investigator Research Title: Investigation of enabling autonomous flight capabilities onboard commercial aircraft Research Funding: UWE Early Career Researchers Grant Grant: Approximately £14,000 for 1 year, 2013

	Role: Principal investigator
Research and Publications including Journal and Books:	1. Lone, A.; Nemati, H.; Zhu, Q.; Mercorelli, P.; Narayan, P. "U-model-based dynamic inversion control for quadrotor UAV systems," in <i>Modeling, Identification, and Control for Cyber- Physical Systems Towards Industry 4.0</i>, pp. 293-309, 2024. 2. Li, R.; Zhu, Q.; Zhang, W.; Yue, X.; Narayan, P. "An improved U-control design for nonlinear systems represented by input/output differential models with a disturbance observer," in <i>International Journal of Control</i>, vol. 96, no. 11, pp. 2737-2748, 2023. 3. Li, R.; Zhu, Q.; Nemati, H.; Yue, X.; Narayan, P. "Trajectory tracking of a quadrotor using extend state observer based U-model enhanced double sliding mode control," in <i>Journal of the Franklin Institute</i>, vol. 360, no. 4, pp. 3520-3544, 2023. 4. Chen, J.; Gan, M.; Zhu, Q.; Narayan, P.; Liu, Y., "Robust Standard Gradient Descent Algorithm for ARX Models Using Aitken Acceleration Technique," in <i>IEEE Transactions on Cybernetics</i>, vol. 52, no. 9, pp. 9646-9655, 2022. 5. Li, R.; Zhu, Q.; Yang, J.; Narayan, P.; Yue, X., "Disturbance-observer-based u-control (Dobuc) for nonlinear dynamic systems," in <i>Entropy</i>, vol. 23, no. 12, 2021. 6. Li, R.; Zhu, Q.; Narayan, P.; Yue, A.; Yao, Y.; Deng, M. "U-model-based two-degree-of-freedom internal model control of nonlinear dynamic systems," in <i>Entropy</i>, vol. 23, no. 2, pp. 1-23, 2021. 7. Rasoolinasab, S.; Mobayen, S.; Fekih, A.; Narayan, P.; Yao, Y. "A composite feedback approach to stabilize nonholonomic systems with time varying time delays and nonlinear disturbances," in <i>ISA Transactions</i>, vol. 101, pp. 177-188, 2020. 8. Chen, J.; Zhu, Q.; Hu, M.; Guo, L.; Narayan, P. "Improved gradient descent algorithms for time-delay rational state-space systems: intelligent search method and momentum method," in <i>Nonlinear Dynamics</i>, vol. 101, no. 1, pp. 361-373, 2020. 9. Zhang, W.; Zhu, Q.; Mobayen, S.; Yan, H.; Qiu, J.; Narayan, P. "U -Model and U -Control Methodology for Nonlinear Dynamic Systems," in <i>Complexity</i>, vol. 2020, 2020.

	10. Khannoussi, A.; Olteanu, A.-L.; Labreuche, C.; Narayan, P.; Dezan, C.; Diguët, J.-P.; Petit-Frère, J.; Meyer, P. "Integrating operators' preferences into decisions of unmanned aerial vehicles: Multi-layer decision engine and incremental preference elicitation," in <i>Lecture Notes in Computer Science</i>, vol. 11834 LNAI, pp. 49-64, 2019. 11. Abdessemed, C.; Yao, Y.; Boufferouk, A.; Narayan, P. "Morphing airfoils analysis using dynamic meshing," in <i>International Journal of Numerical Methods for Heat and Fluid Flow</i>, vol. 28, no. 5, pp. 1117-1133, 2018. 12. Zhu, Q.; Zhao, D.; Zhang, S.; Narayan, P. "U-model enhanced dynamic control of a heavy oil pyrolysis cracking furnace," in <i>IEEE/CAA Journal of Automatica Sinica</i>, vol. 5, no. 2, pp. 577-586, 2018. 13. Chen, H.; Lin, P.; Emrith, K.; Narayan, P.; Yao, Y. "Ensemble-empirical-mode-decomposition based micro-Doppler signal separation and classification," in <i>International Journal of Computer Applications in Technology</i>, vol. 56, no. 4, pp. 253-263, 2017. 14. Narayan, P.; Meyer, P.; Campbell, D. "Embedding human expert cognition into autonomous UAS trajectory planning," in <i>IEEE Transactions on Cybernetics</i>, vol. 43, no. 2, pp. 530-541, 2013. 15. Gonzalez, F.; Castro, M.P.G.; Narayan, P.; Walker, R.; Zeller, L. "Development of an autonomous unmanned aerial system to collect time-stamped samples from the atmosphere and localize potential pathogen sources," in <i>Journal of Field Robotics</i>, vol. 28, no. 6, pp. 961-976, 2011.
Paper Presentations at Professional Conferences:	1. Madi, F.; Kanaa, Z.; Narayan, P.; Yao, Y. "An Investigation of a Morphing Flapped Wing", <i>Aerospace Europe Conference (AEC2020)</i>, 2020. 2. Abdessamed, C.; Yao, Y.; Boufferouk, A.; Narayan, P. "Flow response to rapid morphing flap deflection", <i>54th 3AF International Conference on Applied Aerodynamics</i>, 2019. 3. Abdessamed, C.; Yao, Y.; Boufferouk, A.; Narayan, P. "Influence of non-iterative time-advancement schemes on the aerodynamic prediction of pitching airfoils using dynamic mesh," <i>8th International Symposium on Physics of Fluids (ISPF8)</i>, 2019. 4. Abdessamed, C.; Yao, Y.; Boufferouk, A.; Narayan, P. "Aeroacoustics investigation of a harmonically morphing trailing edge flap," <i>53rd 3AF International Conference on Applied Aerodynamics</i>, 2018. 5. Abdessamed, C.; Yao, Y.; Boufferouk, A.; Narayan, P. "Aerodynamic analysis of a harmonically morphing flap using a hybrid turbulence

	model and dynamic meshing," in 2018 <i>Applied Aerodynamics Conference</i> , 2018.
6.	Abdessamed, C.; Yao, Y.; Boufferouk, A.; Narayan, P. "Analysis of a 3D unsteady morphing wing with seamless side-edge transition," in 2018 <i>Applied Aerodynamics Conference</i> , 2018.
7.	Abdessamed, C.; Yao, Y.; Narayan, P.; Boufferouk, A. "Unsteady parametrization of a morphing wing design for improved aerodynamic performance," 52nd 3AF <i>International Conference on Applied Aerodynamics</i> 2017.
8.	Liu, X.; Zhu, Q.; Narayan, P. "Case studies on U state space control system design for quadrotor model," in <i>Proceedings of 2016 8th International Conference on Modelling, Identification and Control, ICMIC 2016</i> , pp. 857-862, 2017.
9.	Liu, X.; Zhu, Q.; Narayan, P. "Case studies on U-state space control system design for aircraft dynamic model," in <i>Proceedings of 2015 7th International Conference on Modelling, Identification and Control, ICMIC 2015</i> , 2016.
10.	Zhu, G.; Qiu, J.; Zhu, Q.; Narayan, P.; Wright, S. "Design of U-PPC-Type II for Nonlinear Systems," in <i>Chinese Control Conference, CCC</i> , vol. 2016-August, pp. 10431-10435, 2016.
11.	Liu, X.; Zhu, Q.; Narayan, P.; Yang, Y. "The first stage studies of U-state space control system design," in <i>Chinese Control Conference, CCC</i> , vol. 2015-September, pp. 946-951, 2015.
12.	Liu, X.; Peng, Y.; Zhu, Q.; Narayan, P.; Xu, F. "U-model based LMI robust controller design," in <i>Proceedings of the 33rd Chinese Control Conference, CCC 2014</i> , pp. 2200-2205, 2014.
13.	Narayan, P.; Dogramadzi, S. "Enabling autonomous flight capabilities onboard commercial aircraft to improve safety," in <i>AIAA/IEEE Digital Avionics Systems Conference - Proceedings</i> , 2013.
14.	Narayan, P.; Campbell, D.; Walker, R. "Computationally adaptive multi-objective trajectory optimization for UAS with variable planning deadlines," in <i>IEEE Aerospace Conference Proceedings</i> , 2009.
15.	Narayan, P.; Campbell, D.; Walker, R. "Multi-objective UAS flight management in time constrained low altitude local environments," in <i>46th AIAA Aerospace Sciences Meeting and Exhibit</i> , 2008.

	16. Narayan, P.; Wu, P.; Campbell, D. "Unmanning UAVs: Addressing challenges in on-board planning and decision making," in <i>First International Conference on Humans Operating Unmanned Systems HUMOUS'08</i>, 2008, pp. 159–171. 17. Narayan, P.; Wu, P.; Campbell, D.; Walker, R. "An intelligent control architecture for unmanned aerial systems (UAS) in the National Airspace System (NAS)," in <i>2nd International Unmanned Air Vehicle Systems Conference</i>, 2007, pp. 1–11. 18. Wu, P.; Narayan, P.; Campbell, D.; Lees, M.; Walker, R. "A high performance fuzzy logic architecture for UAV decision making," in <i>Proceedings of the 2nd IASTED International Conference on Computational Intelligence, CI 2006</i>, pp. 260-265, 2006.
College Service including committee Membership:	
National Service:	
College Committees:	