

CURRICULUM VITAE

Anura P. Rathnayake, PhD.

CEng MIMechE, CEng MIESL

Scholarly Associate Professor and Program Coordinator

Mechanical Engineering at Olympic College, Bremerton

School of Mechanical and Materials Engineering

Voiland College of Engineering and Architecture

Washington State University

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Professional summary

An academic and a professional engineer with over 18 years of teaching, research, scholarship, and extension experience in Mechanical Engineering. Research and teaching experience diversify to both nationally and internationally in the USA, Australia, Japan, and Sri Lanka. Ongoing projects seeks to develop methods and tools for decision support systems in precision agriculture with online/ offline data driven smart management using modern sensing and imaging technologies.

Education

- **PhD** (2004–2007) Graduate School of Science and Engineering, Saitama University, Saitama, Japan
Major: Optical Measurements and Control
Thesis: Application of statistical interferometry to investigate nano-scale growth dynamics of plants
- **PG Dip.** (2001–2002) Department of Mechanical Engineering, University of Peradeniya, Peradeniya, Sri Lanka
Major: Mechanical Systems Engineering
- **BSc. Eng.** (1996–2000) Department of Manufacturing and Industrial Engineering, University of Peradeniya, Peradeniya, Sri Lanka
Major: Mechanical (Manufacturing based) Engineering

Work experience

- **Scholarly Associate Professor and Program Coordinator** Aug, 2022 – continuing
Mechanical Engineering at Olympic College, Bremerton
School of Mechanical and Materials Engineering
Washington State University, United States of America
- **Assistant Professor in Agricultural Engineering** Aug, 2021 – July, 2022
Department of Agriculture
University of Arkansas at Pine Bluff
United States of America
- **Research Scholar** Sep, 2018 – July, 2021
Center for Precision and Automated Agricultural Systems
Irrigated Agriculture Research and Extension Center
Washington State University, United States of America
- **Visiting Research Fellow** Aug, 2016 - Feb, 2017
Science and Engineering Faculty
School of Mechanical, Medical and Process Engineering
Queensland University of Technology, Australia
- **Adjunct Faculty/ Visiting Fulbright Scholar** Mar, 2016 - Aug, 2016
Center for Precision and Automated Agricultural Systems
Washington State University, United States of America
- **Head of the Department** Jul, 2011 - Jan, 2016
Dept. of Mechanical and Manufacturing Engineering

- Faculty of Engineering
University of Ruhuna, Sri Lanka
- **Senior Lecturer** **Jan, 2008 - Apr, 2019**
Dept. of Mechanical and Manufacturing Engineering
Faculty of Engineering
University of Ruhuna, Sri Lanka
 - **Doctoral Fellow** **Oct, 2004 - Sep, 2007**
Optical Sensing Laboratory
Graduate School of Science and Engineering
Saitama University, Japan
 - **Lecturer** **Jun, 2002 - Dec, 2007**
Dept. of Mechanical and Manufacturing Engineering
Faculty of Engineering
University of Ruhuna, Sri Lanka
 - **Postgraduate Researcher** **May, 2001 to Jun, 2002**
Department of Mechanical Engineering
Faculty of Engineering
University of Peradeniya, Sri Lanka
 - **Academic Instructor** **Aug, 2000 – May, 2001**
Department of Manufacturing and Industrial Engineering
Faculty of Engineering
University of Peradeniya, Sri Lanka
 - **Manufacturing Engineer (Internship)** **Feb, 1999 – Aug, 1999**
Camsco Loadstar (Pvt.) Ltd.
Kotugoda, Sri Lanka

Professional memberships

- Chartered (Professional) Engineer (CEng MIMechE), licentiate by the Institution of Mechanical Engineers, United Kingdom since December 2014.
- Chartered Engineer (CEng MIESL), licentiate by the Institution of Engineers, Sri Lanka since November, 2015.
- Member, American Society of Agricultural and Biological Engineers (ASABE) since June 2017.

Awards

- Fulbright Advanced Research and Lecturing Awards, Department of State, United States of America (March, 2016).
- Endeavour Postdoctoral Research Fellowship, Department of Education and Training, Government of Australia (August, 2016).
- Presidential Research awards for scientific publications, awarded by the President of Sri Lanka, Presidential Secretariat, and National Research Council of Sri Lanka (April, 2014).
- IMechE Educational Awards, Institution of Mechanical Engineers, United Kingdom (April, 2017).
- Best Presenter in technical session on Engineering and Technology, 16th Academic Sessions and 15th Vice Chancellor's Awards of the University of Ruhuna, Sri Lanka (March, 2019).
- Best Presenter in technical session on Electrical Engineering, Mechanical Engineering and Information Sciences, 15th Academic Sessions and 14th Vice Chancellor's Awards of the University of Ruhuna, Sri Lanka (March, 2018).
- Japanese Government Scholarship to pursue PhD studies at the Graduate School of Science and Engineering, Saitama University, Japan (October, 2004).

Completed training courses

- Drone Technology and Basic Flight Training, March 2022.
- Outcome-based curriculum development for engineering degree programs, August 2013.
- Quality improvements in university examinations, December 2012.

- Outcome-based education for engineering degree programs, December 2011.
- Comprehensive proposal writing for quality and innovation grants, December 2011.
- Outcome-based approach to modern engineering, October 2011.

Completed research projects

Washington State University, USA

- Optimization of Intelligent sprayer (LiDAR and GPS based variable rate spray system) for spray application in modern orchard systems. The project is conducted in collaboration with the USDA-Agricultural Research Service and Smart Guided Systems.
- Alternative pest management technologies (Ozonated water and Horticultural oil-based Thermo-therapy) for tree fruit and wine grapes, project funded by the Washington State Department of Agriculture.
- “Smart Orchard”, the project focusing data-informed farming, bringing together on & off farm data enabling farmers to make informed management decisions based on Machine Learning/AI. The project was coordinated by the Washington state Tree Fruit Research Commission (WTFRC) lead by the Innov8 Ag Solutions (partnered with Microsoft) in collaboration with Washington Farm Bureau.
- “Data to Model Apple Airblast Spraying Drift Exposure Levels”. The project focused on scientific empirical data acquisition for validating mechanistic drift model to assess the risk in agrochemical spraying. The project was conducted in collaboration with USDA-Forest Services, WTFRC, and Continuum Dynamics, Inc.
- “Database of Airblast Sprayer Metrics for Mechanistic Drift Model”. The project aimed to generate reliable database on variants of orchard airblast sprayers’ functional attributes, funded by the WTFRC and USDA-Forest Services.
- Performance evaluation of a novel pulse width modulation control based advanced spraying system in modern orchards. The project was conducted in collaboration with the Capstan Ag Systems, Inc.
- Collaborated for the project “Autonomous Agricultural Application using Unmanned Aircraft” conducted by the Continuum Dynamics Inc., Dragonfly Pictures Inc., and Pendleton UAS Range funded by the NASA.

Queensland University of Technology (in collaboration with University of Southern Queensland), Australia

- Digital Image Correlation (DIC) techniques for detecting delamination crack propagation in glass epoxy composites.

University of Ruhuna, Sri Lanka (with industry funding)

- Design and implementation of an Automated Guided Vehicle (AGV) system for finished goods transportation in the pen assembly plant of Atlas Axillia (Pvt.) Ltd, Colombo, Sri Lanka.
- Design and implementation of an Automated box packing system in the pen manufacturing plant of Atlas Axillia (Pvt.) Ltd, Colombo, Sri Lanka.
- Design and implementation of an Automated card packing system in the pen manufacturing plant of Atlas Axillia (Pvt.) Ltd, Colombo, Sri Lanka.
- A Semi-automatic bottle filling system designed for Sri Lankan beverage sector.
- Development of a smart drone for dengue fighting.
- Design and fabrication of an automated book packing system for Atlas Axillia (Pvt.) Ltd, Colombo, Sri Lanka.
- Design and implementation of an automated book picking system for Atlas Axillia (Pvt.) Ltd, Colombo, Sri Lanka.
- Design of a semi-automated machine for twine coir rope-based stitched blanket knitting for Hayleys Fibre (Pvt.) Ltd, Galle, Sri Lanka.
- Design of a semi-automated machine for twine coir rope-based Oyster net knitting for Hayleys Fibre (Pvt.) Ltd, Galle, Sri Lanka.
- Development of low-cost radial gate position reader for medium and small-scale water canals in Sri Lanka.

- Development of a mobile agent with GPS aided navigation for outdoor mapping.
- Development of cutting speed synchronization system for spin-plying of wooden logs for Ginthota Plywood PLC, Sri Lanka.
- Determination of the best spinning axis of wooden logs to be plied for plywood manufacturing at Ginthota Plywood PLC, Sri Lanka.
- Design of precision scribing machine to locate strain gauge on load-cells, at Flintech Transducers PLC, Koggala FTZ, Sri Lanka.
- Development of a three-axis CNC engraving machine for Nawaloka Trading (Pvt.) Ltd, Peliyagoda, Sri Lanka.
- Optimization of off-center load cell calibration machine at Flintech Transducers PLC, Koggala FTZ, Sri Lanka.
- Automation of the offset load cell sensitivity adjustable machines at Flintech Transducers PLC, Koggala FTZ, Sri Lanka.

Courses taught

- **Area of Applied Mechanics:** Engineering Mechanics, Modeling of Dynamic Systems, Theory of Machines and Mechanisms, Design of Machine Elements, Mechanical Engineering Design, Non-destructive Testing.
- **Area of Automatic Control Engineering/ Robotics:** Introduction to Mechatronics and Robotics, Sensors and Instrumentation, Automatic Control Engineering, Industrial Automation and Control.
- **Area of Manufacturing and Engineering Management:** Machine Workshop Technology, Manufacturing Engineering, Production Planning and Control, Statistical Quality Control, Industrial Engineering, Maintenance Management, Analysis of Manufacturing Systems.
- **Area of Thermal and Fluid Engineering:** Applied Thermodynamics, Heat Transfer, Fluid Mechanics.

Research supervision

- PI of the postgraduate research project on “Development of a multi-agent robot navigation system with adaptive formation control” leading to an MPhil degree (From January 2009 to February 2014).
- Mentoring graduate students of precision agriculture group at the Center for Precision and Automated Agricultural Systems, Washington State University (From September 2018 – July 2021).

International journal review contributions

- Technical reviewer USDA-NIFA SBIR grants proposals
- Reviewer for the publications of American Society of Biological and Agricultural Engineers
- Reviewer for the journal; Science of the Total Environment
- Reviewer for the journal; Postharvest Biology and Technology
- Reviewer for the journal; Remote Sensing
- Reviewer for the journal; Measurement
- Reviewer for the journal; Central European Journal of Engineering
- Reviewer for the Australian Journal of Mechanical Engineering
- Reviewer for the journal; Advances in Engineering Software, Elsevier

Management positions held

University of Ruhuna, Sri Lanka

- Head of the Department – Dept. Mechanical and Manufacturing Engineering (June 2011- Jan. 2016).
- Division Head – Applied Mechanics, Control & Mechatronics (Oct. 2007- Jan. 2016).
- Lab-in charge – Dynamics, control and automation laboratory, Dept. Mechanical and Manufacturing Engineering (Jan. 2003- Sep. 2018).
- Academic Warden – Faculty of Engineering (June 2008- May 2011).
- Chairman – Faculty Research Committee, Faculty of Engineering (June 2011- Jan. 2016).

- Chairman – Curriculum Development Committee, Dept. Mechanical and Manufacturing Engineering (June 2011- Jan. 2016).
- Member – Senate of the University of Ruhuna (June 2011- Jan. 2016).
- Member – Board of Engineering, Faculty of Engineering (Jan. 2003- Apr. 2019).
- Member – Study (postgraduate) Board of Engineering (June 2011- Jan. 2016).
- Patron – Mechanical and Manufacturing Engineering Students Society (June 2011- Jan. 2016).
- Faculty Adviser – University of Ruhuna Students chapter of Institution of Mechanical Engineers (United Kingdom) (May 2012- Jan. 2016).
- Faculty Adviser – Students Society of the Faculty of Engineering (Feb. 2017- Aug. 2018).
- Faculty Advisor – Sports Council of the Faculty of Engineering (Jan. 2003 – Sep. 2004)

Saitama University, Japan

- Secretary of the Sri Lankan Students Association in Japan (Jan. 2005- Apr. 2006).

Other scholarly contributions

- Consultant – Mechanical Engineering, establishing new Bachelor's degree program on Engineering Technology, Wayamba University of Sri Lanka.
- External Reviewer – Bachelor of Engineering Technology Degree Program, Sabaragamuwa University of Sri Lanka.
- Resource person – External review committee of the Bachelor of Engineering Technology Degree Program, Uva Wellassa University, Badulla, Sri Lanka (2017).
- Member – External review committee for evaluating Mechanical Engineering degrees in Sri Lanka for accrediting with Washington Accord requirements, appointed by the Institution of Engineers, Sri Lanka (2017-2018).
- Foreign Examiner – PhD thesis evaluation, Andhra University College of Engineering, Visakhapatnam, Andhra Pradesh, India (2015).
- Foreign Examiner – PhD thesis evaluation, GITAM University, Visakhapatnam, India (2015).
- Foreign Examiner – PhD thesis evaluation, SBM College of Engineering & Technology, Dindigul District, Tamilnadu, India (2015).
- Foreign Examiner – PhD thesis evaluation, Sri Subramanya College of Engineering & Technology, Tamil Nadu, India (2014).
- Foreign Examiner – PhD thesis evaluation, Anna University, Chennai, India (2011-2018).
- External Examiner – Postgraduate theses and staff research grants evaluation, University of Peradeniya, Sri Lanka (2012).
- External Reviewer – Bachelor of Engineering Technology Degree curriculum, Sabaragamuwa University of Sri Lanka.
- Reviewer – Engineering Undergraduate Research Catalyst Conference -2013, Taylors University, Malaysia.
- Reviewer – Production and Operations Management Society (POMS) International Conference, Kandy, Sri Lanka, 2018.
- Reviewer –Moratuwa Engineering Research Conference (MERCon), University of Moratuwa, Sri Lanka, 2018.
- External reviewer – Annual Research grants of South Eastern University of Sri Lanka, 2017.
- Reviewer-Compleitive research grants proposals, National Science Fundation, Sri Lanka, 2016.
- Reviewer – International Conference on Sustainable Built Environment (ICSBE), 2015.
- Reviewer – Ruhuna International Science and Technology Conference-2015, Faculty of Science, University of Ruhuna, Sri Lanka.
- Reviewer – Ruhuna International Science and Technology Conference-2014, Faculty of Science, University of Ruhuna, Sri Lanka.
- Reviewer – Peradeniya University International Research Sessions (iPURSE)-2015, University of Peradeniya, Sri Lanka.

- Co-Chair – Pre-Conference International Workshop themed Advances in Sustainable Engineering Systems-2014, Faculty of Engineering, University of Ruhuna, Sri Lanka.
- Editorial Chair – Manufacturing and Industrial Engineering Symposium-2016, Waters Edge, Colombo, Sri Lanka.
- Member – International Advisory Committee, Special Session on Sustainable Manufacturing, The 7th International Conference on Sustainable Built Environment-2016, Earls Regency Hotel, Kandy, Sri Lanka.
- Member – International Advisory Committee, Production and Operations Management Society (POMS) International Conference-2018, Earls Regency Hotel, Kandy, Sri Lanka.
- Coordinator – Southern Asia Region, Asia Pacific Regional Design Competition for People with hearing disorders-2015, Institution of Mechanical Engineers, UK.
- Member – Committee for IEE (Initial Environmental Examination) on the project of establishing a Nanotechnology Park, Sri Lankan Institute of Nanotechnology (SLINTEC) and National Science Foundation, Sri Lanka.
- Resource person – Training program for Lecturers of Sri Lanka Institute of Advanced Technological Education, Ministry of Higher Education, Sri Lanka.

List of Publications

Published:

1. **Anura P. Rathnayake**, Ramesh K. Sahni, Gwen A. Hoheisel, Lav R. Khot, Heping Zhu, 2022. “Intelligent sprayer spray rates optimization to efficiently apply chemicals in modern apple orchards”. *Journal of the ASABE*. <http://dx.doi.org/10.13031/ja.14654>.
2. Mark J. Schrader, **Anura P. Rathnayake**, Lav R. Khot, 2022. “Horticultural Oil Thermootherapy Delivery System for Perennial Specialty Crops: A-Proof-of-Concept and Preliminary Results”. *Applied Engineering in Agriculture* 38(2), 461-468. <http://dx.doi.org/10.13031/aea.14786>.
3. **Anura P. Rathnayake**, Abhilash K. Chandel, Mark J. Schrader, Gwen A. Hoheisel, Lav R. Khot, 2022. “Air velocity profiles and perceptive canopy interactions of commercial airblast sprayers used in Pacific Northwest perennial specialty crop production”, *Agricultural Engineering International: CIGR Journal*, 24(1), <https://cigrjournal.org/index.php/Ejournal/article/view/7039/3797>.
4. Gajanan S. Kothawade, Abhilash K. Chandel, M. Jacob Schrader, **Anura Rathnayake**, Lav R. Khot, 2021. “High throughput canopy characterization of a commercial apple orchard using aerial RGB imagery”, In *2021 IEEE International Workshop on Metrology for Agriculture and Forestry (MetroAgriFor)* (pp. 177-181). IEEE. <http://dx.doi.org/10.1109/MetroAgriFor52389.2021.9628564>
5. Abhilash K. Chandel, **Anura P. Rathnayake**, Lav R. Khot, 2021. “Aerial multispectral imagery to map spatiotemporal physiological attributes towards management of apple tree canopies trained in a modern v-trellis architecture”, *Proceedings of the XII International Symposium on Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems*, July 26-30, 2021, Wenatchee, USA.
6. **Anura P. Rathnayake**, Abhilash K. Chandel, Mark J. Schrader, Gwen A. Hoheisel, Lav R. Khot, 2021. “Spray patterns and perceptive canopy interaction assessment of commercial airblast sprayers used in Pacific Northwest perennial specialty crop production”, *Computers and Electronics in Agriculture* <https://doi.org/10.1016/j.compag.2021.106097>.
7. **Rathnayake, A. P.**, R. Khot, G. A. Hoheisel, H. W. Thistle, M. E. Teske, and M. J. Willett. 2021. “Downwind spray drift assessment for airblast sprayer applications in a modern apple orchard system”. *Transactions of the ASABE*. <https://doi.org/10.13031/trans.14324>.
8. Rajeev Sinha, Lav Khot, **Anura Rathnayake**, Zongmei Gao, Naidu Rayapati, 2019. “Visible–near infrared spectroscopy–based detection of Grapevine leafroll–associated virus 3 in a red–fruited wine grape cultivar”, *Computers and Electronics in Agriculture*. <https://doi.org/10.1016/j.compag.2019.04.008>.
9. Carlos Zuniga Espinoza, **Anura P. Rathnayake**, Momtanu Chakraborty, Sindhuja Sankaran, Pete Jacoby, Lav R. Khot, 2018. “Applicability of time-of-flight based ground and multispectral aerial

imaging for grapevine canopy vigour monitoring under direct root zone deficit irrigation”, *International Journal of Remote Sensing*. <https://doi.org/10.1080/01431161.2018.1500047>.

10. Priyanka, J.G.V., **Anura P. Rathnayake**, and Maithripala, D.H.S., 2017. “Development of a non-holonomic multi-agent robot navigation system with adaptive formation control”, *Journal of the University of Ruhuna*, 5(1-2), pp.11–13. <https://jur.sjlo.info/articles/abstract/7889/>.
11. **Anura P. Rathnayake**, Hirofumi Kadono, Satoru Toyooka and Makoto Miwa, 2008. “A novel optical interference technique to measure minute root elongations of Japanese red pine (*Pinus densiflora* Seibold & Zucc.) seedlings infected with ectomycorrhizal fungi”, *Environmental and Experimental Botany*. <https://doi.org/10.1016/j.envexpbot.2008.02.007>.
12. Satoru Toyooka, Hirofumi Kadono, Makoto Miwa, **Anura P. Rathnayake**, 2008. “Environmental Diagnosis by Optical Measurements of Plant Growth”, *Journal of The Japanese Society for Experimental Mechanics*, <https://doi.org/10.11395/jjsem.8.333>.
13. **Anura P. Rathnayake**, Hirofumi Kadono, Satoru Toyooka and Makoto Miwa, 2007. “Statistical interferometric investigation of nano-scale root growth: effects of short-term ozone exposure on ectomycorrhizal pine (*Pinus densiflora*) seedlings”, *Journal of Forest Research*, <https://doi.org/10.1007/s10310-007-0040-x>.

Presented:

14. Sahni, R.K., Schrader, M.J., **Rathnayake, A.P.**, Khot, L.R., Hoheisel, G.A., Zhu, H. 2022. “Intelligent sprayer augmented by a base spray rate estimation method for efficient agrochemical applications in grapevines”. Paper presented at *ASABE AIM 2022* held during July 17–20, 2022 at Houston, Texas.
15. Sahni, R.K., Schrader, M.J., **Rathnayake, A.P.**, Khot, L.R., Hoheisel, G.A., Zhu, H. (April 8, 2022). “Intelligent sprayer optimization for efficient agrochemical application in vertical shoot position trained grapevines”. Poster presented at *Honoring Undergraduate and Graduate Student Scholars (HUGSS) 2022 organized by Heritage University, WSU IAREC and Yakima Valley College*.
16. Sahni, R.K., Schrader, M.J., **Rathnayake, A.P.**, Khot, L.R., Hoheisel, G.A., Zhu, H. (November 18–19, 2021). “Optimizing intelligent sprayer for efficient agrochemical applications in vertical shoot position trained grapevines”. Poster presented at *WSGS Annual meeting and trade show 2021*.
17. **Anura Rathnayake**, Ramesh Sahni, Lav Khot, Gwen Hoheisel, Heping Zhu, 2021. “Optimizing the Base Spray Rates for Efficient Intelligent Sprayer Applications in Modern Apple Orchard Systems”, *2021 ASABE International meeting*, July 12 - 16, 2021, Virtual.
18. **Anura Rathnayake**, Lav Khot, Gwen Hoheisel, Harold Thistle, Milt Teske, Mike Willett, 2021. “Airblast spray drift assessment in a modern orchard system at dormant and full canopy growth stages”, *2021 ASABE International meeting*, July 12 - 16, 2021, Virtual.
19. Mark Schrader, **Anura Rathnayake**, Gwen Hoheisel, Elizabeth Beers, Lav Khot, 2021. “Optimization and Evaluation of Commercial Ozonated Water Sprayer Retrofit towards Winterform Pear Psylla Management”, *2021 ASABE International meeting*, July 12 - 16, 2021, Virtual.
20. Mark Schrader, **Anura Rathnayake**, Lav Khot, 2021. “Field-Scale Horticultural Oil Thermochemistry Delivery System: A-Proof-of-Concept and Preliminary Results”, *2021 ASABE International meeting*, July 12 - 16, 2021, Virtual.
21. Gajanan S. Kothawade, Abhilash K. Chandel, M. Jacob Schrader, **Anura Rathnayake**, Lav R. Khot, 2021. “High Throughput Canopy Characterization of a Commercial Apple Orchard Using a Small UAS Equipped with a Consumer-Grade RGB Imager”, Paper No. 2101235. *2021 ASABE International meeting*, July 12 - 16, 2021, Virtual.
22. **Anura Rathnayake**, Lav Khot, Gwen A. Hoheisel, Heping Zhu, 2020. “Intelligent sprayer optimized for modern apple orchard systems”, *Washington State Tree Fruit Research Association Flash News*, December 2020, Virtual.
23. **Anura Rathnayake**, Lav Khot, Gwen A. Hoheisel, Heping Zhu, 2020. “Spray rate optimization for pesticide applications with intelligent sprayer in modern orchard systems”, *2020 WSU Digital Agriculture Summit*, October 6 - 7, 2020, Virtual.

24. **Anura P. Rathnayake**, Gwen A. Hoheisel, Lav R. Khot, 2020. “A PWM based retrofit controller for optimized spray applications in perennial specialty crops”, *ASABE International meeting*, July 12 - 15, 2020, Virtual.
25. **Anura Rathnayake**, Lav R. Khot, Gwen A. Hoheisel, Mike J. Willet, Milton E. Teske, Harold W. Thistle, “Data to Model Apple Airblast Spraying Drift Exposure Levels”, *Washington State Tree Fruit Research Association Flash News*, Yakima, WA, December 2019.
26. Jake Schrader, Rajeev Sinha, **Anura Rathnayake**, Lav R. Khot, Gwen A. Hoheisel, “Alternate Pest Management Technologies”, *Washington State Tree Fruit Research Association Flash News*, Yakima, WA, December 2019.
27. **Anura P. Rathnayake**, R.R. Sinha, L. R. Khot, R. Naidu, “Spectroradiometry based Rapid Detection of Leafroll Disease in Grape wines of North America”, *15th Academic Sessions of University of Ruhuna*, Faculty of Fisheries and Marine Science & Technology, University of Ruhuna, Matara, Sri Lanka, March 2018.
28. J.G.V. Priyanka, **Anura P. Rathnayake**, D.H.S. Maithipala, “Adaptation of Algorithms implemented on Mobile Robots Formation Control”, *15th Academic Sessions of University of Ruhuna*, Faculty of Fisheries and Marine Science & Technology, University of Ruhuna, Matara, Sri Lanka, March 2018.
29. N.M.C.S.S. Abhayawardana, **Anura P. Rathnayake**, “A Semi-Automatic Bottle Filling System Designed for Sri Lankan Beverage Sector”, *15th Academic Sessions of University of Ruhuna*, Faculty of Fisheries and Marine Science & Technology, University of Ruhuna, Matara, Sri Lanka, March 2018.
30. De Silva S.A.S.Y., Madusanka E.H.D.D.T., Wijerathna W.M.S.M., Priyanka J.G.V., **Anura P. Rathnayake**, “Development of a Smart Drone for Dengue Fighting”, *Fifth Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2018.
31. Perera H.V., Ashokkumar M., Elilraj P., **Anura P. Rathnayake**, Hettiarachchi N.K., Harshana D., “Design and Fabrication of an Automated Book Packing for Ceylon Pencil Company Ltd.”, *Fifth Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2018.
32. Ayad Kakei, J.A. Epaarachchi, Mainul Islam, J. Leng, **Anura P. Rathnayake**, N.K. Hettiarachchi; “Evaluation of Thermo-Elastic Stress Analysis (TSA) and Digital Image Correlation (DIC) Techniques for Detection of Delamination Crack Propagation of Glass Epoxy Composite Plate under Uni-Axial Cyclic Loading”; *21st International Conference on Composite Materials (ICCM21)* in Xi’an, China, August 20 – 25, 2017.
33. Sinha, R., Z. Gao, **A.P. Rathnayake**, L.R. Khot and R.A. Naidu. 2017. “Visible–near infrared spectroscopy-based Grapevine Leafroll–associated virus–3 detection from undetached leaves under field condition”. *CPAAS Agricultural Technology Day*, July 31, 2017 (Poster Presentation).
34. **Anura P. Rathnayake**, Carlos Zuniga, Lav R. Khot, Sindhuja Sankaran, and Pete Jacoby, “Applicability of 3D Imaging for measuring grapevine plant growth under subsurface drip irrigation”, Paper No. 1701180, *ASABE 2017 Annual International Meeting*, Spokane, USA, July 16-19, 2017.
35. Sinha, R., Z. Gao, **Anura P. Rathnayake**, L. R. Khot and R. Naidu, “Visible–near infrared spectroscopy-based Grapevine leafroll associated virus–3 detection from undetached leaves under field condition”, Paper No. 1700499, *ASABE 2017 Annual International Meeting*, Spokane, USA, July 16-19, 2017.
36. **Anura P. Rathnayake**, Carlos Zuniga, Lav R. Khot, Sindhuja Sankaran, and Pete Jacoby, “Applicability of 3D Imaging for Plant Irrigation Management”, *14th Academic Sessions of University of Ruhuna*, Faculty of Engineering, Galle, Sri Lanka, March 2017.
37. Ranwala P.C.J., Kumara W.C.D., **Anura P. Rathnayake**, “Design and Implementation of an Automated Book Picking System for Ceylon Pencil Company Ltd.”, *Third Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2016.
38. Manathunga M.A.T.D., Ranwala P.C.J., **Anura P. Rathnayake**, “Design and Implementation of an Automated Student Attendance Monitoring and Recording System”, *Third Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2016.

39. Alwis K.A.M., De Silva P.L.I.T., Perera D.T.H.U.K., **Anura P. Rathnayake**, Karunasena H.C.P., “Design of a Semi-Automated Machine for Twine Coir Rope-based Stitched Blanket Knitting”, *Third Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2016.
40. Sandeepa G.H.Y., Udayanga K.A.N., De Silva N.U.C., **Anura P. Rathnayake**, Karunasena H.C.P., “Design of a Semi-Automated Machine for Twine Coir Rope-based Oyster Net Knitting”, *Third Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2016.
41. **Anura P. Rathnayake**, Ramanayaka R.M.R.W., Usgodaarachchi D.M., Thilakarathne M.D.S.W., “Development of Low-Cost Radial Gate Position Reader for Medium and Small-scale Water Canals”, *Second Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2015.
42. Fernando W.M.J, Jayawardhana K.V.T.R, Kumara A.M.S.R, Priyanka J.G.V, **Anura P. Rathnayake**, “Development of a Semi Automated Quadrotor”, *First Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2014.
43. Jayawardana A.K.H, Kumara R.K.U.P, Buddhika U.R, Priyanka J.G.V, **Anura P. Rathnayake**, “Development of Cutting Speed Synchronization System for Spin -Plying of Wooden Logs for Gintota Plywoods PLC”, *First Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2014.
44. Bandara H.M.H.C, Buddhika W.L.K.J, Wijekoon W.B.M.R.C.B, Hettiarachchi N.K., **Anura P. Rathnayake**, “Self-Operated Gate Structure Model for Water Level Control at Canals with Remote Access in Sri Lanka”, *First Annual Research Symposium of the Faculty of Engineering*, University of Ruhuna, Galle, Sri Lanka, January 2014.
45. Jayawickrema U.M.N., Kodithuwakku K.M.H.M., De Silva K.G.V.K., **Anura P. Rathnayake**, “Design and Fabrication of a Solar Thermal Driven Desalination Unit”, *10th Academic Sessions of the University of Ruhuna 2012*, Faculty of Medicine, Galle, Sri Lanka, February 2013.
46. Varuna Priyanka J.G., **Anura P. Rathanyake**, Maithripala D.H.S., “Comparison of Formation Algorithms Implemented on Multi-Agent Mobile Robots”, *SAITM Research Symposium on Engineering Advancements*, (SAITM – RSEA 2012), South Asian Institute of Technology and Medicine, Colombo, Sri Lanka, April 2012.
47. Darshana K.A.D., **Anura P. Rathanyake**, Eranda K.H.M.A., Abayarathna W.S., “Design and Fabrication of an Autonomous Mobile Robot for Industrial Mapping Processes”, *9th Academic Sessions of the University of Ruhuna, Faculty of Agriculture*, Kamburupitiya, Sri Lanka, February 2012.
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