

De Silva R K J

Department of Textile and Apparel Engineering, University of Moratuwa

Full Name : Ranapanada Kelum Jayamali De Silva

Position : Senior Lecturer (Grade II)

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CAREER HISTORY

- Industry Career / Duration

2007-2009 Application Support Engineer, DMS Garment Technologies (Pvt) Ltd, Colombo 08.

2005-2006 Pattern Technologist at MAS Intimates (Pvt) Ltd, Rathmalana.

2004-2005 Technical Trainee at MAS Linea Aqua (Pvt) Ltd, Hanwella

- Instructor / Department. University / Duration

2018-to date Senior Lecturer (Grade II)- Department of Textile and Apparel Engineering, University of Moratuwa.

2013-2018 Lecturer (Probationary)- Department of Textile and Apparel Engineering, University of Moratuwa

2012-2013 Lecturer (On contract)- Department of Textile and Apparel Engineering, University of Moratuwa

2009-2012 Visiting lecturer- Department of Textile and Apparel Engineering, University of Moratuwa

2009–2022 Visiting lecturer – Bachelor of Applied Science (Textile Technology) degree program conducted by Brandix Corporate Campus in partnership with RMIT University, Australia.

TEACHING & ADMINISTRATIVE ACTIVITIES

Undergraduate Teaching

Module code [credit]	Module name	Student contact hrs
TE1040 [2]	Pattern Technology and Construction I	70
TE1020 [3]	Introduction to Textile and Apparel Manufacturing	56
TE2211 [2]	Pattern Technology and Construction II	42
TE3210 [3]	CAD in Apparels	56
TE3210 [2]	Comprehensive Design Project (CDP – Apparel)	42
TE4340 [2]	Advanced Pattern Technology and Virtual Prototyping	42
FD4260 [3]	CAD for Fashion and Textile II	70

Postgraduate Teaching

2019 to date MSc in Textile & Clothing Management; TT5025- module “General Garment Technology” at Department of Textile and Apparel Engineering, University of Moratuwa

Administrative Positions

2025 Nov International Relations Coordinator of the Department of Textile and Apparel Engineering
2025 Oct Student Counselor of the Department of Textile and Apparel Engineering
2025 Oct ERU Representative of the Department of Textile and Apparel Engineering
2025 July Lecturer-In-Charge Design Studio Laboratory
2024 to date Finance and Registration Chair for the 10th and 11th Moratuwa Engineering Research Conference (MERCon 2024, MERCon 2025).
2024 to date Industrial Relations and Career Guidance Committee member.
2023 Publicity Chair 9th Moratuwa Engineering Research Conference (MERCon 2023).
2022 Member of the Judge panel (preliminary rounds) of the 3MT challenge organized by the IEEE Professional Communication Student Society of the University of Moratuwa, Sri Lanka.
2021 to date Career Guidance Department Coordinator
2021-2025 Level 4 Coordinator of BSc Eng in Textile and Apparel Engineering degree.
2021 -2023 Senior Treasurer of the Textile Engineering Students Society (TESS)
2019-2021 Level 2 Coordinator Fashion Design and Product Development degree.
2018 to date Lecturer-In-Charge CAD Laboratory
2018 to date Personal mentor – for Level 1 undergraduates of the department.

RESEARCH ACTIVITIES

Research Interests

2D CAD and 3D CAD in apparel; Digital prototyping; New product development in Apparel; Pattern making & Garment Technology; Human body anthropometry measurements; Contour garment production, Pedagogy in Education.

Key Research Areas

Engineered pattern construction, New Product Development Process Models, Digital product Creation in Apparel, Digital Transformation in Apparel Industry.

EDUCATION & PROFESSIONAL AFFILIATIONS

Education

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| 2015 – 2018 | Ph.D. in Industrial Management (Split-site) University of Kelaniya, SL and Manchester Metropolitan University, Manchester, UK. |
| 2015 | Certificate in Research Methodology course, University of Kelaniya. |
| 2014 | Certificate in Teaching in Higher Education (CTHE), Staff Development Center, University of Colombo. |
| 2004 | Professional Diploma in Marketing (ACIM), Chartered Institute of Marketing (CIM UK). |
| 2004 | BSc Eng (Hons), Department of Textile & Clothing Technology, University of Moratuwa, second upper division. |
| 2000 | Certificate in Information Technology, Sri Lanka Institute of Information Technology (SLIIT). |

Professional Affiliations

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| 2022-To date | Non-voting member of IEEE Standards Association, participating in an IEEE standards development activity 3D Body processing working group. IEEE P3141. |
| 2025 | Member – Textile Institute (UK) |
| 2025 | Member - Sri Lanka Association for the Advancement of Science (SLAAS- Section C) |
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CAREER

Other Involvements

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| 2015 | Reviewer Research Journal of Textile and Apparel, Q2-Journal, Emerald Publishing |
| 2020-To date | Reviewer for International Journal of Fashion Design, Technology and Education Q1-Journal (Taylor & Francis) affiliated with the Textile Institute. |
| 2023-To date | Reviewer for Journal “Virtual Reality” by Springer Nature Group-Q1 Journal |
| 2020- To date | Reviewer, Digital Fashion Innovation (DFI) e-Symposium, organized at Manchester Metropolitan University, UK. |

2019 to date	Examiner moderator at the Diploma degree program of Institute of Technology University of Moratuwa Diploma program
2018- 2019	Participation in the curriculum development board of the National competency standard and curriculum for the fashion designer at National Apprentice and Industrial Training Authority, Rajagiriya, Sri Lanka.
2021- 2024	Reviewer - Moratuwa Engineering Research Conference (MERCon)
2023	Reviewer- 8th International Conference on Information Technology Research (ICITR 2023), December 7 th and 8 th , 2023 at the Faculty of Information Technology, University of Moratuwa.
2021-2023	Reviewer- International Research Conference of Institute of Technology, University of Moratuwa Research Symposium (ITUMRS).

HONORS & AWARDS

2024	Principal investigator of the SRC Long Term research grant (Rs. 2,000,000.00) of the University of Moratuwa, project titled, ‘A predictive model to estimate ease allowances for accurate fit and function of custom-made clothing’.
2015- 2018	UGC Scholarship Sri Lanka (Rs. 1,580,000) – Received funding to complete the PhD split-site placement at the Manchester Metropolitan University, Manchester, UK
2020, 2022	Outstanding Research Performances awarded by the University of Moratuwa, Sri Lanka.
2014	Attained Staff and Educational Development Association (SEDA), UK qualification for Teaching in Higher Education.

PUBLICATIONS & PATENTS

Book Chapter

Uduwela, **RKJ De Silva**, T Rupasinghe, L. Ranathunga, (2023), Conceptualization of Natural Language-Based Product Configurators for New Product Development in Apparel, Digitalization and Management Innovation, IOS Press.

Journals

W. C. Uduwela, **R. K. J. De Silva**, L. Ranathunga (2025), Enabling self-service technology (SST) using an intelligent chatbot to advance the online apparel co-design process, International Journal of Fashion Design, Technology and Education, DOI: 10.1080/17543266.2024.2363767, **Q1 Journal**.

PU Navodhya, **RKJ De Silva**, S Gill (2025), Analysis of calculated ease values in semi-fitted bodice blocks considering quasi-static poses, Fashion Practice, Routledge **Q1 Journal**.

RKJ De Silva, PU Navodhya, S Gill (2023), Analysis of body-to-pattern relationships using traditional pattern drafting techniques: implications for automated digital prototyping, International Journal of Fashion Design, Technology and Education, **Q1 Journal**.

R.K.J. De Silva, A Peramunugamage (2023), Emergency remote CAD teaching using licensed software in apparel during the COVID-19 pandemic: a collaborative learning approach, Research in Learning Technology. **Q2 Journal**.

R. K. J. De Silva, T. D. Rupasinghe & P. Apeagyei (2018), A collaborative apparel new product development process model using virtual reality and augmented reality technologies as enablers, International Journal of Fashion Design, Technology and Education, **Q1 Journal** DOI: 10.1080/17543266.2018.1462858

De Silva R. K. J., Rupasinghe T D. (2018), A New Product Development Model for Performance Clothing Industry, International Journal of Product Development (IJPd), Vol. 22, No. 4.
<http://www.inderscience.com/jhome.php?jcode=ijspm>.

De Silva R. K. J., Basnayake B.M. A. N. (2019), An Augmented Reality-based simulation guide for apparel assembly, International Journal of Recent Technology and Engineering (IJRTE). **ISSN: 2277-3878**.

De Silva R. K. J., Rupasinghe T D. (2016), New Product Development and Innovation Approaches: An Exploratory Study in Sri Lankan Apparel Manufacturing Organizations, International Journal of Management and Applied Science (IJMAS), ISSN: 2394-7926 Volume-2, Issue-8.
http://www.ijmas.in/journal/journal_file/journal_pdf/14-279-1473671096205-210.pdf.

De Silva R. K. J., Rupasinghe T D. (2016), Characterization of New Product Development (NPD) Models Applicable to enhance the overall performance of the Apparel Industry, International Journal of Textile and Fashion Technology.
http://www.tjprc.org/view-archives.php?year=2016_50_2&id=29&jtype=2.

Kariyawasam, K.H.G.A.S., **De Silva, R. K. J.** (2020), Enhance body contoured woven occasional wear, inspiring from performance wear production, GARI International Journal of Multidisciplinary Research, ISSN 2659-2193, [Journal-Book-Volume-06-Issue-03.pdf \(research.lk\)](#).

Dasanayake, U.D.M.M., **De Silva, R. K. J.** (2020) Plus size clothing challenges and new opportunities for athleisure women's wear, GARI International Journal of Multidisciplinary Research, ISSN 2659-2193, [Journal-Book-Volume-06-Issue-03.pdf \(research.lk\)](#).

Yapa, N.H.D.S.S., **De Silva, R.K.J.**, (2020) Developing a "Ready-to-wear" Saree blouse using appropriate fabrication and pattern cutting methods, ISSN 2659-2193, [Journal-Book-Volume-06-Issue-03.pdf \(research.lk\)](#).

Conferences/Symposium

Nanayakkara, T., **De Silva, R K J.**, A [Novel Criteria Driven Framework for Selecting the right Problem Solving Tool to Streamline Manufacturing Process Improvements](#), ANQ (Asian Network for Quality) Congress 2025, 3rd -7th November 2025.

N.G. C. K. Gamage, K.M. G. C. Abewardhana, R.A. K. Lakdilina, R.K.J. De Silva, A Machine Learning Approach for Generating the Crotch Curve in Customised Trousers Patterns, 2025 Moratuwa Engineering Research Conference (MERCon), Nov 2025, IEEE, 10.1109/MERCon67903.2025.11217030.

Fernando D.T., Methma S.L.K.K., **De Silva R.K.J.**, Developing a web-based Augmented Reality tool for promoting sustainable fashion consumption, 4th SLIIT International Conference on Engineering and Technology, Malabe, Sri Lanka, Sep 2025.

Balasooriya L, Withanaarachchi S, **De Silva R K J**, Data Driven Patternmaking: Automated Generation of Stretch-Knit Patterns for Different Fabric Stretch, 4th SLIIT International Conference on Engineering and Technology, Malabe, Sri Lanka, Sep 2025.

Balasooriya L, Withanaarachchi S, **De Silva R K J**, Improve the Fit Precision of Stretch Knit Garments: Developing a Novel Pattern Grading Method Using Digital Fit Experiments, 2024 9th International Conference on Advances in Technology and Computing (ICATC), IEEE, June 2025, 10.1109/ICATC64549.2024.11025283.

Navodhya P.U., **De Silva R.K.J.**, Gill, S., A comparative study on the influence of body shape on the fit and functionality of stretch knit garments, 3DBODY.TECH 2024, 15th Int. Conference and Exhibition on 3D Body Scanning and Processing Technologies, Lugano, Switzerland, 22-23 October 2024.

Navodhya P.U., **De Silva R.K.J.**, Gill, S., Stretch Knit Pattern Cutting: Bridging the gap between the 2D and 3D realm for enhanced garment fit, Digital Fashion Innovation (DFI) Conference 2024, Manchester, UK.

Carol McDonald, **De Silva R. K. J. (2022)**, Characterizing Apparel & Fit for Virtual and Physical Worlds with Logic statements, 3DBODY.TECH 2022, 13th Int. Conference and Exhibition on 3D Body Scanning and Processing Technologies, Lugano, Switzerland, <https://doi.org/10.15221/22.14>.

Scopus Indexed - W. C. Uduwela, **De Silva R.K.J.**, Rupasinghe, T. D., [Digital Transformations in the Apparel Value Chain for Mass Personalization](#), 2020 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), 450-454, IEEE, 2020, DOI: 10.1109/IEEM45057.2020.9309852.

Scopus Indexed - Bandulahewa, B.K.M., **De Silva, R. K. J.**, [Characterization of Virtual Prototyping In 'Refashion' to Augment Circular Apparel Industry](#), 2020 From Innovation to Impact (FITI), IEEE Xplore, <https://ieeexplore.ieee.org/document/9424872/>.

Kithmini, P.K.C., Weerakoon, W.M.H.U., Mediawaka, A., **De Silva, R.K.J.**, 3D Virtual Clothing: An Operational Framework to Achieve Realistic 3D Prototype, Digital Fashion Innovation (DFI) e-Symposium, 28th – 30th September 2020, Manchester Metropolitan University, Manchester, UK.

Uduwela, W., **De Silva, R. K. J.**, Rupasinghe, T.D., Ranathunga, L., Applicability of Natural Language Based Requirement Elicitation Approach for Mass Customization in the Apparel Industry, Digital Fashion Innovation (DFI) e-Symposium, 28th – 30th September 2020, Manchester Metropolitan University, Manchester, UK.

Basnayaka, B. M. A. N, **De Silva R. K. J.**, An Augmented Reality-based, prototyping support system for the apparel industry, POMS 2018 International Conference, Sri Lanka, December 14-16, 2018.

De Silva, R. K. J., Rupasinghe, T., & Apeageyi, P. Virtual reality and augmented reality enabled new product development process model for performance clothing, 18th International Postgraduate Research Conference, University of Kelaniya, Sri Lanka. 8th December, 2017.

De Silva R. K. J., Rupasinghe T D. Conceptualization of a virtual reality-based new product development process for the apparel industry”, In Proceedings of 9th Postgraduate Research Conference, Manchester Metropolitan University, Manchester, UK. 22nd February, 2017.

De Silva R. K. J., Rupasinghe T D. (2016), New Product Development and Innovation Approaches: An Exploratory Study in Sri Lankan Apparel Manufacturing Organizations, In Proceedings of International Conference on Science, Innovation and Management (ICSIM) Kuala Lumpur, Malaysia, June 4-5, 2016.

De Silva R. K. J., Rupasinghe T D. (2017), The New Product Development Process: A systematic review of literature applicable for the Apparel Industry, International Conference on Apparel, Textiles and Fashion Designing. 20th December, Colombo, 2015.

(<http://conference.serendivus.com/index.php/main/loadApparelTextilesAndFashionDesigning>)

Ariyadasa, V. A., **De Silva R. K. J.** (October, 2016), [Improve Moisture Management Property in Casual Wear](#), International Conference on Multidisciplinary Approaches (ICMA), Faculty of Graduate Studies, University of Sri Jayewardenepura, Sri Lanka.

Meehalla, M. M. D. S. P., **De Silva R. K. J.** (August 2016), [Evaluate the adoptability of virtual fitting room technology for the Sri Lankan clothing retail market](#), A Wayamba international Conference (WinC 2016), Wayamba University, Sri Lanka.

Thathsarani, T., **De Silva R. K. J.** (2014), Introducing light emitting handloom fabrics to Sri Lankan handloom industry using side emitting polymeric optical fibers, International conference on multidisciplinary approaches (ICMA), University of Sri Jayewardenepura, Sri Lanka.

OTHER

keynote speeches / plenary speech / panelist / moderator

Invited Plenary Speaker & Session Chair at the 5th International Conference on Apparel Textiles and Fashion Design organized by GARI SUMMER MULTIDISCIPLINARY SYMPOSIUM 2022 on 11th August 2022 at the Galle Face Hotel, Colombo. The title of the speech, “Digital Fashion Business: Fashion in the Metaverse”.

Technical session chair and Invited Speaker at the 73rd International Conference organized by the International Institute of Engineers and Researchers (IIER) held in Kuala Lumpur, Malaysia on 5th June 2016.

Resource person – workshops and seminars of conferences & CPD

Workshop titled, “Digital Innovation: From Fashion Design to Apparel Manufacturing” was conducted at the 4th International Conference on Engineering and Technology 2025 at SLIIT, Malabe, Sri Lanka 9th September 2025.

Invited Plenary Speaker & Session Chair at the 5th International Conference on Apparel Textiles and Fashion Design organized by GARI SUMMER MULTIDISCIPLINARY SYMPOSIUM 2022 on 11th August 2022 at the Galle Face Hotel, Colombo. The title of the speech, “Digital Fashion Business: Fashion in the Metaverse”.

Presenter and organizer of the workshop “Digital Technology Deployment in Apparel Product Development” at Moratuwa Engineering Research Conference (MERCON 2021), collaboratively presented with Dr Simeon Gill and Dr Kristina Brubacher, University of Manchester. <https://youtu.be/Oj41OPeG9Rk>.

No of postgraduate supervision

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| 2025 | MSc by Research, Development of a Data-Driven Framework to Quantify Digital Maturity in Sri Lanka’s Apparel Industry. |
| 2021 – to date | PhD dissertation, Principal supervisor for research named 'A predictive model to estimate ease allowances for accurate fit and function of custom-made clothing. Funded by Commonwealth Split-Site- PhD scholarship, placement at University of Manchester, UK. |
| 2019 to date | Ph.D. dissertation, Co-Supervisor for research named “Natural Language-based Requirement Elicitation for Apparel Product Design and Customization”. |
| 2020 | M.Sc. thesis Supervisor (Research component), titled "Application of 3D CAD applications to uplift circular fashion business". |
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