

Ashala Senanayake

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<https://ashala-senanayake.github.io/>

TECHNICAL SKILLS

Programming Languages: Python, Java, C
Operating Systems: Windows, macOS, Linux
Web Development: HTML5, CSS3, JavaScript, Vue.js, Node.js
Frameworks & Libraries: PyTorch, Hugging Face, OpenPrompt
Cloud Services: Amazon Web Services (EC2, S3, RDS, ECS), Docker
Databases & Big Data Tools: MySQL, Oracle PL/SQL, Apache Kudu, Apache Impala, Apache Spark, NiFi, Elasticsearch
Version Control: Git - branching, rebasing, PR workflows, CI/CD automation, linting, and secret management
Teaching Modules: Web Development, Database Systems, Artificial Intelligence
Research Areas: Machine Learning, Deep Learning, Natural Language Processing, Time-Series Analysis, Prompt Engineering, Ontological Modelling, Health Informatics

EDUCATION

Master of Engineering in digital health informatics, Faculty of Engineering, Kyoto University of Advanced Science (KUAS), Japan. (*Expected completion: September 2026*).

Bachelor of Science in Information Technology, University of Moratuwa, Sri Lanka, December 2020.

EXPERIENCE

Tamai Investment Education Inc. - Japan (*July 2023 – To-Date*)

Software Engineer

Working as a full-stack engineer on a web platform used by Japanese cram schools to manage operations, student progress, and educational materials. Responsible for designing and implementing both frontend and backend business logic using JavaScript frameworks (Vue.js, Node.js).

London Stock Exchange Group Technology – Sri Lanka (*May 2021 – June 2023*)

Software Engineer

Contributed to the Surveillance System project at London Stock Exchange Group Technology, focused on detecting market misbehavior. Implemented data integration pipelines between on-premises systems and Amazon RDS using AWS services and migrated Oracle databases to the cloud. Owned and maintained the Global Data Lake (GDL) process. Additionally, acted as the developer lead for delivering customer change requests within agile sprints.

IFS R&D International Pvt. Ltd. - Sri Lanka (*March 2020 – March 2021*)

Software Engineer

Contributed to the Fleet Planner project, an airplane maintenance scheduling application at IFS R&D International Pvt. Ltd. Designed and implemented long-range scheduling enhancements for commercial airlines using IFS Aurena and PL/SQL.

Virtusa Pvt. Ltd - Sri Lanka (*January 2019 – May 2019*)

Trainee Software Engineer

Integrated a code analysis framework with the Virtusa Gamification Server as part of the ERA Insight project under Virtusa's Global Technology Office (GTO), enabling automated developer performance insights.

Esoft Metropolitan Campus - Sri Lanka (*2020/2021 and 2021/2022*)

Visiting Lecturer

ACADEMIC PROJECTS

CIERTe (Python), *Kyoto University of Advanced Science, June 2025*: A time-aware framework was developed to improve mental health screening from social media data. It models how users' emotional states change over time, even with irregular posting patterns, and uses specialized contextual embeddings to better interpret content. By analyzing long-term trends instead of individual posts, the system enhances the detection and monitoring of anxiety.

Sinhala E-News Enhancer (Python), *University of Moratuwa, 2019*: Designed and implemented a semantic search module using natural language processing techniques. Developed an ontology to model domain knowledge and improve the interpretation of user queries. Built pipelines for entity extraction, concept mapping, and structured knowledge representation. Enhanced search accuracy by retrieving results based on semantic relevance rather than keyword matching.

PUBLICATIONS

Refereed and Indexed

- 2026:** Senanayake A., & Liang, Z. CIERTe: Continuous Inter-Event Relative Temporal Anchoring for Anxiety Detection from Social Media Posts. 17th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM BCB)
- 2026:** Priyadarshana Y. H. P. P., Senanayake A., & Liang, A Multi-Metric Framework for Evaluating Synthetic Explanations in Digital Mental Health. 19th International Joint Conf. on Biomedical Engineering Systems and Technologies (BIOSTEC 2026)
- 2025:** Senanayake A.L., & Liyanage, S. Softening anxiety signals: Prompt-based screening from social media using knowledge-adapted mid-sized models. Journal of Multidisciplinary & Translational Research (*Under review*)
- 2025:** Senanayake A., & Liang, Z. (2024, October). CE-LAH: Contextualized Embeddings for Longitudinal Analysis of Human Anxiety. 2025 IEEE 14th Global Conference on Consumer Electronics (GCCE). IEEE
- 2024:** Senanayake A., & Liang, Z. (2024, October). Time Series Analysis for Social Media Anxiety Detection: A Mini Review. In 2024 IEEE 13th Global Conference on Consumer Electronics (GCCE) (pp. 1006-1007). IEEE.
- 2024:** Priyadarshana Y. H. P. P., Senanayake A., Liang, Z., & Piumarta, I. (2024). Prompt engineering for digital mental health: a short review. Frontiers in Digital Health, 6, 1410947.
- 2023:** Senanayake A.L., & Liyanage, S. (2023). A narrative review on human anxiety detection in social media using natural language processing. Journal of Desk Research Review and Analysis 1.2 (2023)
- 2018:** Senanayake A. L., Priyadarshana, Y. P., & Ranathunga, L. (2018, December). Nouns Speak: A Novel Approach for Noun Sentiment Scoring. In 2018 IEEE Region 10 Humanitarian Technology Conference (R10-HTC) (pp. 1-6). IEEE. **[Best Paper Award]** , **[Best Young Author Award]**

Refereed and Non-Indexed

- 2025:** Senanayake A.L., Liang Z., Anxiety Detection in Reddit Posts Through Emotion Dynamics Analysis. In Proceedings of the 18th International Conference on Health Informatics (HEALTHINF 2025). **[Honorable Mention for Best Poster Award]**
- 2025:** Y.H.P.P Priyadarshana, Senanayake A., Liang Z, *PIFU*: A novel framework to evaluate the interpretability of synthetic free-text explanations in digital mental health. In Proceedings of the Human-Centered Evaluation and Auditing of Language Models (HEAL@CHI '25). Accessed at: <https://heal-workshop.github.io/>. **[The Most Trending Paper Mention]**
- 2025:** Senanayake AL, Y.H.P.P Priyadarshana, Liang Z., Comparative Analysis of XGBoost and Conventional Machine Learning Models for Detecting Anxiety Using Psycholinguistic Features in Social Media Text. In Proceedings of the 87th National Convention of IPSJ -Japan.
- 2025:** Y.H.P.P Priyadarshana, Senanayake A.L., Liang Z., Enhancing interpretability of large language models for contextually dissimilar tasks. In Proceedings of the 87th National Convention of IPSJ - Japan.
- 2020:** Senanayale, A. L., Chandana, S., Gunawardena, L., Waidyarathne, H., & Ranathunga, L. Sinhala E-Newspaper Enhancer- An Ontological Approach For Sinhala Sentiment Scoring Using Recurrent Neural Networks.

ACADAMIC AWARDS

- 2025:** Most Trending Paper Mention Award, Human-centered Evaluation and Auditing of Language Models (HEAL@CHI '25) for *PIFU: A novel framework to evaluate the interpretability of synthetic free-text explanations in digital mental health*.
- 2025:** Honorable Mention for the Best poster award, Anxiety Detection in Reddit Posts Through Emotion Dynamics Analysis. In Proceedings of the 18th International Conference on Health Informatics (HEALTHINF 2025)
- 2024:** KUAS-E Scholarship recipient. for MEng from Kyoto University of Advanced Science (KUAS), Japan.
- 2018:** Best Paper Award for *Nouns Speak: A Novel Approach for Noun Sentiment Scoring*, IEEE Region 10 HTC
- 2018:** Best Young Author Award for *Nouns Speak: A Novel Approach for Noun Sentiment Scoring*, IEEE Region 10 HTC.

OTHER AWARDS

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| 2018: 1st Runners-up Mora Ventures 3.0 | 2017: Best author (April) in Windows Geek English |
| 2018: Finalists SLASSCOM 4iR Hackathon | 2017: Finalists Dialog Gaming Hackathon |
| 2018: Semi-finalists Code Sprint 3.0 | 2017: Champions in AIESEC Corp Hunt 6.0 |
| 2017: 1st place in IESL YMS Hackathon | 2016: Champions in AIESEC Startup challenge 2.0 |
| 2017: Finalists Angel Hack | |

REFEREES

- Dr. Zilu Liang** (liang.zilu@kuas.ac.jp) - Associate Professor, Ubiquitous and Personal Computing Lab, Faculty of Engineering, Kyoto University of Advanced Science (KUAS), Japan.
- Dr. Sidath Liyanage** (sidath@kln.ac.lk) - Professor, University of Kelaniya, Sri Lanka