

# Kavinda Athapaththu

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## Education

2016 – 2020 **University of Colombo School of Computing** BSc. (Hons.) Information Systems  
GPA 3.54, First Class

2000 – 2013 **Maliyadeva College, Kurunegala** Physical Science  
Z Score 1.2

## Research Publications

- 1 Nilukshan Krishnaram, Juzly Ahamed, Nitharshana Sathyamoorthy, Damitha Sandaruwan, & **Kavinda Athapaththu**. (2023). Skeletal point analysis to determine the accuracy of forehand smash shots played by badminton players. In *The international journal on advances in ict for emerging regions (ictcr)*. (**Accepted**).
- 2 Purushoth V., Piyathilake V., **Athapaththu K.**, Sandaruwan D., Hettiarachchi E., & Sayakkara A. (2023). High-tech eyes on marine pollution: Multispectral uav imagery for marine debris monitoring in sri lanka. In *8th international conference on information technology research (icitr)*. (**Under Review**).
- 3 W.M.U. Fernando, K.D. Sandaruwan, & **A.M.K.B. Athapaththu**. (2023). Taekwondo poomsae movement evaluation using skeleton points. In *The international journal on advances in ict for emerging regions (ictcr)*. (**Accepted**).
- 4 **Athapaththu A. M. K. B.**, Perera S. M., G., & Fernando M. G. N. A. S. (2020). Forecasting better prices for trip packages based on historical sales data and related factors: In the context of europe railway tourism. In *2020 20th international conference on advances in ict for emerging regions (ictcr)* (pp. 238–243).  
[🔗 doi:10.1109/ICTer51097.2020.9325480](https://doi.org/10.1109/ICTer51097.2020.9325480)

## Employment History

- 2021 Nov – Present **Lecturer (Probationary)**, University of Colombo School of Computing
- 2020 Oct – 2021 Nov **Temporary Assistant Lecturer**, University of Colombo School of Computing
- 2020 Mar – 2020 Oct **Temporary Instructor**, University of Colombo School of Computing
- 2018 Aug – 2019 Feb **Research Assistant Intern**, Modeling and Simulation Research Lab, University of Colombo School of Computing
- 2016 – Present **Freelancing Web Developer**,  
Portfolio [www.ksoftlabs.lk](http://www.ksoftlabs.lk)
- 2017 – Present **Freelancing Python Developer**,  
Portfolio [www.fiverr.com/share/roAqQN](https://www.fiverr.com/share/roAqQN)

## Qualifications

- 2022 Jan – 2023 Jun **Staff Development Centre, University of Colombo**  
Certificate in Teaching in Higher Education (CTHE)
- 2022 Jan – Present **Staff And Educational Development Association, UK**  
SEDA certificate (In Progress)



## Qualifications (continued)

- 2022 Jun **IELTS Academic - 8.5**  
Listening 9.0  
Reading 9.0  
Writing 7.0  
Speaking 8.0
- 2023 Jan **GRE General Test**  
Verbal Reasoning - 154 (62<sup>nd</sup> percentile)  
Quantitative Reasoning - 158 (61<sup>st</sup> percentile)  
Analytical Writing - 3.5 (37<sup>th</sup> percentile)
- 2020 Oct – 2020 Dec **Staff Development Centre, University of Colombo** Making Teaching Effective (MaTE)
- 2015 **Chartered Institute of Management Accountants (CIMA)**  
Co1 Fundamentals of Management Accounting  
Co3 Fundamentals of Business Mathematics  
Co4 Fundamentals of Business Economics






## Research and Projects

- 2023–Present **Multi-spectral image-based trash detection and classification on marine water bodies**  
This is an ongoing research conducted to propose a technique to detect trash in marine water bodies using aerial images captured using a multi-spectral camera.
- 2022–Present **Diagnose diseases using "Naadi" patterns**  
This study is conducted to propose a technique to predict diseases using "Naadi" (Pulse) patterns described in Sri Lankan indigenous medicine. "Naadi" patterns will be captured using 3 sensors attached to three points in the wrist to measure three signals named as "Waatha", "Pitha" and "Kapa" in Sri Lankan indigenous medicine.
- 2022–2023 **Taekwondo Poomsae movement evaluation using skeleton points**  
The major research problem addressed in this study was the issue of subjectivity in the domain of Poomsae evaluation using traditional methods. In this study, Taekwondo movements were evaluated using two different models; A Dynamic model and an LSTM-based ML model. Both models were evaluated with the help of domain experts and it was found out that the dynamic model performed better in classifying correct and incorrect poses than the ML model.
- Skeletal model analysis to determine the accuracy of smash shots played by badminton players**  
The objective of this research is to evaluate Badminton smash shots so that players can improve their playing style. A dynamic model and a ML model using Random Forest Classifier were produced, and evaluated. In addition to this the dynamic model was adapted to be able to compare the performance of two players.
- 2019 – 2020 **Forecasting better prices for Flam Railway trip packages**  
As the undergraduate final year project, the aim of this research was to study and analyze different machine learning approaches for price forecasting and create a hybrid model for forecasting better prices to maximize the revenue. Model was created in Python using Keras, Tensorflow, sklearn and statsmodels. The average theoretically estimated increase in revenue for the hybrid model was 79.25%.
- 2018 – 2019 **Drone pilot training simulation research**  
This research was carried out to establish a machine learning approach which will generate superior results than a mathematical model. Technologies used were Keras, TensorFlow and Microsoft AirSim. A 3DR Solo drone was used for data collection.
- Fraud detection in finance**  
Several machine learning approaches were tested on the dataset obtained from Kaggle, "Synthetic data from a financial payment system" (<https://www.kaggle.com/ealaxi/banksim1>). It was found that Autoencoders produced a test accuracy of 91%. Furthermore it was discovered that XGBoost produce better results over KNN.







## Research and Projects (continued)

- 2017 – 2018  **Portals**  
As the second year undergraduate project a web portal was developed to provide information about Soma Cube. Technologies used were HTML, CSS, JS, PHP and Unity.
- 2019 – Present  **Mobile games and apps**  
<https://play.google.com/store/apps/dev?id=7212642260519472072>  
Mobiles games and applications developed for Game Jams and as a hobby



## Experience

- 2020 – Present  **Teaching**  
As a lecturer, assistant lecturer and instructor, I conducted variety of lectures, tutorials and practicals. Main courses were Computer Systems, eBusiness Strategy, eLearning and Instructional Design, Enterprise Applications, ERP Systems, Game Development, Graphics II, Laboratory II, Rapid Application Development.
-  **Supervising**  
As a staff member in University of Colombo School of Computing, I am involved in supervising several undergraduate group projects; both 2nd year and 3rd year and co supervising research projects. Furthermore, I have supervised industry placement projects for undergraduates.
-  **Reviewing Research Papers**  
I contributed as an reviewer for ICTer conference organized by University of Colombo School of Computing. I mainly reviewed papers related to machine learning and its applications.
- 2020  **3D modeling and Mapping**  
I was involved in preparing virtual tour of Colombo University Computer Museum (<https://emuseum.ucsc.cmb.ac.lk/>). Several historical equipment were scanned using LiDAR technology and refined using Blender.
- 2020 – Present  **Knowledge Sharing**  
I've contributed to several session organized by different organization as a resource person to share my knowledge. I also maintain a blog at [www.ksoftlabs.com](http://www.ksoftlabs.com) to share my knowledge on various subject areas.

## Skills




- Languages  English (Fluent), Sinhala (Native), Tamil (Fair)
- Coding  Python, PHP, R
- Databases  MySQL, MongoDB
- Web Dev  HTML, CSS, JavaScript
- Graphic  Adobe Photoshop, Adobe Illustrator
- Misc.  Academic research, teaching, training,  $\text{\LaTeX}$  typesetting and publishing.

## Affiliations

- 2023  **Webmaster**, IEEE Region 10 Newsletter
- 2022  **Track Chair**, Human Computer Interactions and **Reviewer** at ICTer 2022  
 **Technical Program Committee Member**, International Conference of Advances in Technology and Computing 2022 (ICATC 2022)  
 **Webmaster**, IEEE Region 10 Robotics Competition 2022
- 2021  **Track Chair**, Applications of IT and **Reviewer** at ICTer 2021
- 2021 – 2022  **Editor**, IEEE Young Professionals Sri Lanka  
 **Vice Chair and Webmaster**, IEEE IAS Sri Lanka Chapter
- 2020  **Web and I.T. Chair**, IEEE PES Global Student Congress
- 2018 – 2020  **Webmaster**, Sri Lanka IEEE Section Student Activities Committee (SAC)

## Affiliations (continued)

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- 2018 – 2019     **Member of Executive Board**, UCSC ISACA Student Group
- 2016 – 2017     **Organizing Committee Member**, iCS Codelab, iHack and iFest organized by UCSC ISACA Student Group
- 2016             **Mentor**, Google Code-In

## References

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References available upon request