DR. NAJINI HARISCHANDRA

Data Scientist (Remote)
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PROFESSIONAL SUMMARY

Ph.D. holder in Information Technology from Monash University Malaysia with extensive experience in medical image analysis, computer vision, and AI-based recognition systems. Over eight years of academic experience in teaching, curriculum development, and student supervision. Proven expertise in Python, MATLAB, R, and statistical modeling, with a strong track record of research publications and conference presentations. Demonstrated leadership in academic outreach and international collaborations.

EDUCATION

Ph.D. in Information Technology Jan 2021
Monash University Malaysia, School of Information Technology
(Thesis certification received on 18/12/2020)

B.Sc. in Computer Science (Honors) Apr 2015
University of Colombo School of Computing
GPA – 3.51

TEACHING EXPERIENCE

The Institute of Chartered Accountants of Sri Lanka Feb 2025 – Present
Visiting Lecturer, School of Business

- Teaching Business Analytics to the students of Master of Business Administration students

BCI Campus Sep 2024 – Present
Visiting Lecturer, School of Computing

- Conducting lectures on Data Mining and Warehousing and Data Visualization for 4th year undergraduate students
- Supervising final year research projects

Monash University Malaysia Aug 2016 - May 2020
Teaching Assistant, School of Information Technology

- Prepared and conducted tutorials for Image Processing (average 25 students per class) covering the following topics: Image processing using MATLAB, image enhancement, steganography, image segmentation, and compression
- Guided the students on the semester-long projects and involved in grading project proposals and presentations

- Conducted lab practicals for Operating Systems (average 20 students per class), covering C programming, CPU scheduling, synchronization, deadlocks, memory management

University of Colombo Feb 2016 - July 2016
Assistant Lecturer, School of computing

- Coordinated with a senior lecturer in developing and teaching the curriculum Theory of Computing, a newly introduced subject for 4th year Computer Science students
- Coordinated the submissions and presentations of the final year research projects (40 students)
- Contributed to developing exam papers for the external degree program (BIT)
- Acted as a panel member in examining final year projects of the external degree program (BIT)

University of Colombo April 2015 - Jan 2016
Instructor, School of Computing

- Made and conducted tutorials and lab practicals for Database Management Systems, Electronics and Discrete Mathematics

PRESENTATIONS AND INVITED LECTURES

Guest lecturer (Image processing), Titled "Classification and machine learning in image processing". Monash University Malaysia, School of Computing. May 2021, May 2022

Paper Presentation (Online), "Multi-atlas based hip bone segmentation from routine clinical hip MRIs of osteoarthritis patients," International Conference on Control, Automation, Robotics and Vision (ICARCV), Date 14/12/2020.

Paper Presentation (Online), "Voxel Classification Based Automatic Hip Cartilage Segmentation from Routine Clinical MR Images," International Conference on Neural Information Processing (ICONIP), Date 20/11/2020.

Symposium Presentation, "Magnetic Resonance Image (MRI) Processing for Detecting Hip Osteoarthritis," SoIT Graduate Research Symposium, Monash University Malaysia, School of Information Technology, Date 04/10/2019.

3 Minute Thesis Presentation, "Hip Osteoarthritis vs. Bone Shape (A shape modeling approach)," Monash University Malaysia (Campus round), Date 30/05/2019

RESEARCH EXPERIENCE

Ph.D. Dissertation Aug 2016 – Jan 2021
Monash University Malaysia, School of Information Technology
Title: Automated segmentation and shape analysis for detecting early structural hip changes in osteoarthritis

- Implemented an intermediate template-based multi-atlas method and a voxel classification-based method to automatically segment bone elements and the cartilage of the hip joint, respectively, from routine clinical MRIs
- Generated a statistical shape model of the proximal femur to explore the associations between the bone shape variants and early joint degeneration characteristics associated with hip osteoarthritis
- Identified the significant bone shapes associated with hip osteoarthritis development using a thorough statistical analysis in R

B.Sc. (Hons) Dissertation Feb 2014 – Apr 2015

University of Colombo School of Computing

Title: Real-time simulation of aero-optical distortions due to air density fluctuations at supersonic speed

- Simulated the refraction visible from a cockpit of a fighter jet in supersonic speed using an optimized physics model considering the speed and the altitude of the jet, the shape of the shock wave, and air density values in shock waves
- Achieved grade A- (10 credits)

PROFESSIONAL EXPERIENCE

NTT DATA Malaysia Jan 2024 – Present

Data scientist (Remote)

- Working on financial data analytics
- Developing statistical and AI models to discover patterns and trends and visualize data

Monash University Malaysia March 2021 – Oct 2023

Post Doctoral fellow, School of IT

- Worked on Micro and macro expression recognition using self-attention based AI models
- Conducted an audio video based data collection using simulated patients following guided conversations showing anxiety and depression

MAIN PUBLICATIONS

Harischandra, N., Dharmaratne, A., Cicuttini, F. M., & Wang, Y.(2020, December). Multi-atlas based hip bone segmentation from routine clinical hip MRIs of osteoarthritis patients. In 2020 16th International Conference on Control, Automation, Robotics and Vision (ICARCV) (pp. 660-665). IEEE.

Harischandra, N., Dharmaratne, A., Cicuttini, F. M., & Wang, Y. (2020, November). Voxel Classification Based Automatic Hip Cartilage Segmentation from Routine Clinical MR Images. In International Conference on Neural Information Processing (pp. 606-614). Springer, Cham.

Harischandra, N., Kodikara, N., Sandaruwan, K. D., Dias, G. K. A., & Weerasinghe, M. (2015, November). Real-Time Simulation of Aero-optical Distortions Due to Air Density Fluctuations at Supersonic Speed. In International Conference on Neural Information Processing (pp. 653-662). Springer, Cham.

HONORS AND AWARDS

Winner – 3-minute thesis competition (school round) 2019
Monash University Malaysia, School of Information Technology

PROFESSIONAL TRAINING

Three-star achievement in leap into leadership online champions program, [Monash University], Date 23/11/2018
Module training and evaluation done as a part of being a student representative

- Event and Project Management
- Goal Achievement
- High Performing Teams

ACTIVITIES

School of IT Staff representative - Promotional tour, Colombo, Sri Lanka July 2023
Monash University Malaysia

- Onsite visits to partner higher education providers to have face to face interviews with future students
- Did a presentation to the partner higher education providers in Sri Lanka covering all the degree programs offered by SoIT, highlighting the new Masters programs on AI and Data Science
- During the Open day, promote SoIT and guided potential and future students and their guardians on joining Monash University

School of IT postgraduate student representative
Monash University Postgraduate Association (MUPA) 2018

- Organized social events (coffee talks, dinner) for postgraduate students in the school of IT
- Involved in policy updating discussions on student milestone evaluations
- Provided guidance and insight to students inquiring about funding, and travel opportunities

REFERENCES

Will be provided upon request