Curriculum Vitae

Shri Harini Ramesh
Ph.D. Student
Department of Systems and Computer Engineering
Faculty of Engineering and Design
Carleton University, Canada

shrihariniramesh@cmail.carleton.ca

Research Interests: Health Data Visualization, Human-Computer Interaction, Generative AI, Applications of AI in Healthcare

Education

PhD. in Biomedical Engineering - Carleton University 2023 - 2027 (expected)
Supervisor: Dr. Fateme Rajabiyazdi

MASc. in Biomedical Engineering - University of Ottawa 2021 - 2023
Thesis: Automated Implementation of the Edinburgh Visual Gait Score (EVGS) | Thesis
Supervisors: Dr. Natalie Baddour | Dr. Edward Lemaire

Bachelors in Biomedical Engineering - Anna University 2017 - 2021
Thesis: Parametrization of Optical Flow Kymograms
Supervisor: Dr. Pravin Kumar

Publications

Peer Reviewed Journal Publications

J2 **Shri Harini Ramesh**, Darwin Jull, Helene Fournier, Fateme Rajabiyazdi. (2025). Exploring Barriers to Patients' Progression in the Cardiac Rehabilitation Journey from Healthcare Providers' Perspectives: Qualitative Study, Interactive Journal of Medical Research DOI:10.2196/66164

J1 **Shri Harini Ramesh**, Edward D. Lemaire, Albert Tu, Kevin Cheung, Natalie Baddour. (2023). Automated Implementation of the Edinburgh Visual Gait Score (EVGS) Using OpenPose and Handheld Smartphone Video, Sensors, no. 10: 4839. https://doi.org/10.3390/s23104839

Peer Reviewed Conference Publications

C4 **Shri Harini Ramesh**, Alicia Ouskine, Elahe Khorasani, Mona Ebrahimipour, Hillel Finestone, Adrian D. C. Chan, Fateme Rajabiyazdi. (2024). A Data Visualization Tool for Patients and Healthcare Providers to Communicate during Inpatient Stroke Rehabilitation, In Proceedings of Graphic Interface DOI: 10.1145/3670947.3670978 (🏆 Best Student Paper Award, selected out of 37 accepted papers)

C3 Fateme Rajabiyazdi, **Shri Harini Ramesh**, Beck Langstone, Daniil Kulik, Justin Pontalba. (2024). TextVista: NLP-Enriched Time-Series Text Data Visualizations, In Proceedings of Graphic Interface DOI: 10.1145/3670947.3670971

C2 **Shri Harini Ramesh**, Edward D. Lemaire, Albert Tu, Kevin Cheung, and Natalie Baddour. (2023). Automated Stride Detection from OpenPose Keypoints Using Handheld Smartphone Video, In Proceedings of IEEE Sensor Applications Symposium, 01-06 DOI: 10.1109/SAS58821.2023.10254104

C1 B. Panchami, S.Pravin Kumar, A.J. Rajkumar, V.Rishika, **Shri Harini Ramesh**. (2023). Parametrization of Optical Flow Kymograms, In Proceedings of International Conference on Intelligent Systems for Communication, IoT and Security, 114-119 DOI: 10.1109/ICISCoIS56541.2023.10100493

Peer Reviewed Workshop Papers

W1 **Shri Harini Ramesh**, Fateme Rajabiyazdi. (2024). Challenges and Opportunities of Teaching Data Visualization Together with Data Science, EduVis: 2nd IEEE VIS Workshop on Visualization Education, Literacy, and Activities, 01-07 DOI: 10.1109/EduVIS63909.2024.00006

Abstracts and Posters

AP2 **Shri Harini Ramesh**, Helene Fournier, Fateme Rajabiyazdi. (2024). Exploring Barriers to Cardiac Rehabilitation Utilization: Perspectives of Healthcare Providers - A Qualitative Study, Ottawa Cardiovascular Research Day

AP1 **Shri Harini Ramesh**, Edward D. Lemaire, Natalie Baddour, Kevin Cheung, and Albert Tu. (2023). Development and validation of a remote video acquisition and analysis protocol using AI for evaluation of gait, American Academy for Cerebral Palsy and Developmental Medicine 77th Annual Meeting (🏆 Best Scientific Poster Award, selected out of 192 accepted posters)

Teaching Experience

Course Instructor

Carleton University (April–May 2025)
Be a Data Science and AI Health Detective: Discover What Your Body's Telling You Through Data! Designed and delivered a week-long course for grade 8–10 students, creating all materials and activities to teach data science and AI applications in health. Course website: datascience4health.netlify.app

Graduate Teaching Assistant

Carleton University
SYSC4504 - Web Development | SYSC 2004 - Object Oriented Software Development | SYSC3600 - Systems and Simulation | SYSC4906 - Introduction to Data Science and Data Visualization | SYSC 3610 - Biomedical Systems, Modelling and Control | SYSC 4203 - Bioinstrumentation and Signals
University of Ottawa
CEG 3136 - Computer Architecture | BMG-5109 - Medical Diagnostic Engineering

Invited Talks

T5 Guest Lecture - Ethics, Research Methods and Standards for Biomedical Engineering Course February 2025
Title: A Step by Step Breakdown of Research Process

T4 Guest Lecture - Advanced Data Visualization Course October 2023 & 2024
Title: Data Visualization using PowerBI

T3 Canadian Celebration of Women in Computing Conference (CAN-CWiC) October 2023
Title: Interactive Data Visualization for Analyzing Virtual Cardiac Rehabilitation Journey of Patients

T2 IEEE Ottawa Section: Engineering in Medicine and Biology Society September 2023
Title: Identifying Challenges and Barriers to Virtual Cardiac Rehabilitation Participation

T1 The Ottawa Hospital Research Institute: Research day September 2022
Title: Development and Validation of a Remote Video Acquisition and Analysis Protocol Using Artificial Intelligence for Gait Evaluation

Work Experience

Braiyt.ai May 2022 - June 2023
Data Analytics Intern | Development of Tableau dashboards for retail store video analytics, the creation of 3D scenes with Unreal Engine for a digital twin project, and involvement in 3D scene design in Nvidia Omniverse, as well as database integration with Influx Database for a government-funded workspace digital twin project.

Nexmatics May 2021 - August 2021

SDE Image processing| Applied a range of image processing techniques, including edge detection, image enhancement, and object recognition, to contribute to the development of image processing algorithms for the company's new prototype.

Mentorship

Darwin Jull Sept 2023 - April 2024

Bachelors in Biomedical Engineering | Carleton University

Scholarship and Awards

Pavel Kalab Scholarship, Carleton University, $2800	2024-2025
Bhargava Family Scholarship, Carleton University, $2500	2024-2025
Vanier Canada Graduate Scholarships, Nominated by the department, $50000	2024-2025
International Doctoral Excellence Award (IDE), Carleton University, $26000	2023-2025
SYSC Department Admission Scholarship, Carleton University, $8000	2023-2027
Bhargava Family Scholarship, Carleton University, $1500	2023-2024
Allan Buchanan Scholarship, Carleton University, $4800	2023-2024
International Master's Student Scholarship, University of Ottawa, $6000	2021-2022
NSERC CREATE-BEST, University of Ottawa, $20000	2021-2023
Semi-finalists of IICDC 2019, Government of India and Texas Instruments, $200	2019-2020
Merit Scholarship, Anna University, $1500	2017-2018

Technical Skills

Programming Languages	Python, C, MATLAB, R, JavaScript, HTML/CSS
Data Science and Machine Learning	pandas, NumPy, scikit-learn, Keras, PyTorch, TensorFlow
Database Management	Dataverse, PostgreSQL, MySQL, MongoDB, SQLite
Data Visualization	D3.js, Tableau, Power BI, Matplotlib, Seaborn, Figma
Web Development Frameworks	Django, React
3D Modeling and Game Development	Unreal Engine, Unity 3D, Blender
Qualitative Research Methodologies	Semi-structured Interviews, Thematic Analysis, Open Coding
Version Control and Collaboration Tools	Git, GitHub, GitLab
Cloud Computing and DevOps	AWS, Google Cloud, Firebase
Other Tools	LaTeX, Overleaf, BibTeX

Relevant Coursework

Graduate	Data Visualization, eHealth and mHealth, Pattern Classification and Design of Experiments, Machine Learning, Interactive Networked Systems and Telemedicine, Advanced Image Processing, Medical Imaging Modalities, Introduction to Biomedical Engineering
Undergraduate	Brain Computer Interface, Data Structures, Python and C Programming, Data Structures, Digital Image Processing, Anatomy & Physiology, Virtual & Augmented Reality, Calculus, Linear Algebra, Differential Equations, Probability & Statistics

Academic Service

Technical Program Committee (TPC), IEEE Pacific Visualization Symposium (PacificVis) 2025

Peer Reviewer

- IEEE VIS: Visualization & Visual Analytics 2025
- IEEE VIS Educational Visualization (EduVis) Workshop 2024
- ACM CHI Conference on Human Factors in Computing Systems (CHI) 2025

Volunteering

Carleton University @ Engineering in Medicine and Biological Sciences (CU @EMBS) 2024 - 2025
Chair| Organizing workshops, seminars, and outreach events to promote interdisciplinary collaboration and student engagement in biomedical engineering and health technology.

Girls SySTEM 2023
Mentor| Providing guidance to explore diverse STEM fields and gain firsthand experience before entering post-secondary education, enabling them to make well-informed decisions about their future paths.

IEEE Ottawa Section 2023 - 2024
Social media and newsletter coordinator| Keep members updated on recent activities and promote the IEEE Ottawa Section on LinkedIn.

Mitacs 2023 - 2025
Globalink Mitacs Mentor | Guided 24 international undergraduate students during their internships at Carleton University in Summer 2023, 2024, and 2025, helping with their relocation and settling-in process, including bank setup and accommodation.

Canadian Biomaterials Society - Ottawa Student Chapter (CBS-OSC) 2022
Mentor| Providing one-on-one guidance on diverse topics, including applying to graduate schools, pursuing scholarships, improving CVs, reaching out to professors, and choosing fields of study for graduate education.