

Shri Harini Ramesh

Last Updated: February 9, 2026

3rd Year Ph.D. Student



Department of Computer Science
Faculty of Science
University of Calgary, Canada

Research Interests: Health Data Visualization • Human-Computer Interaction • Human-Centered AI

Education

PhD in Computer Science – University of Calgary	2026 – 2027 (expected)
<i>Supervisor:</i> Dr. Fateme Rajabiyazdi, Assistant Professor	
<i>Affiliations:</i> Interactions lab (iLab) & HealthvisFutures Lab	
<i>Note:</i> Transferred from Carleton University in Winter 2026.	
PhD in Biomedical Engineering – Carleton University	2023 – 2025
<i>Supervisor:</i> Dr. Fateme Rajabiyazdi, Assistant Professor	
MASc in Biomedical Engineering – University of Ottawa	2021 – 2023
<i>Supervisors:</i> Dr. Natalie Baddour, Dr. Edward Lemaire, Professor	
<i>Thesis:</i> Automated Implementation of the Edinburgh Visual Gait Score (EVGS)	
Bachelor in Biomedical Engineering – Anna University	2017 – 2021
<i>Supervisor:</i> Dr. Pravin Kumar, Associate Professor	
<i>Thesis:</i> Parametrization of Optical Flow Kymograms	

Publications

Peer-Reviewed Journal Articles

- 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*, 14, e66164. <https://doi.org/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*, 23(10), 4839. <https://doi.org/10.3390/s23104839>

Peer-Reviewed Conference Proceedings

- C6 **Shri Harini Ramesh**, Foroozan Daneshzand, Babak Rashidi, Shrithi Raj, Hariharan Subramonyam, Fateme Rajabiyazdi. (2026). Metacognitive Demands and Strategies While Using Off-The-Shelf AI Conversational Agents for Health Information Seeking. *Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems (CHI '26)*, April 13–17, 2026, Barcelona, Spain. 16 pages. <https://doi.org/10.1145/3772318.3791647>
- C5 **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. *Proceedings of Graphics Interface 2024 (GI '24)*, Article 31, 1–14. <https://doi.org/10.1145/3670947.3670978> **Best Student Paper Award**, selected out of 37 accepted papers
- C4 Fateme Rajabiyazdi, **Shri Harini Ramesh**, Beck Langstone, Daniil Kulik, Justin Pontalba. (2024). TextVista: NLP-Enriched Time-Series Text Data Visualizations. *Proceedings of Graphics Interface 2024 (GI '24)*, Article 12, 1–12. <https://doi.org/10.1145/3670947.3670971>
- C3 **Shri Harini Ramesh**, Edward D. Lemaire, Albert Tu, Kevin Cheung, Natalie Baddour. (2023). Automated Stride

Detection from OpenPose Keypoints Using Handheld Smartphone Video. *Proceedings of IEEE Sensor Applications Symposium (SAS '23)*, 1–6. <https://doi.org/10.1109/SAS58821.2023.10254104>

C2 B. Panchami, S. Pravin Kumar, A. J. Rajkumar, V. Rishika, **Shri Harini Ramesh**. (2023). Parametrization of Optical Flow Kymograms. *Proceedings of International Conference on Intelligent Systems for Communication, IoT and Security (ICISCoIS '23)*, 114–119. <https://doi.org/10.1109/ICISCoIS56541.2023.10100493>

C1 **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*, 1–7. <https://doi.org/10.1109/EduVIS63909.2024.00006>

Book Chapters

B1 Gurucharan Marthi Krishnakumar, **Shri Harini Ramesh**, Vijay Jeyakumar. (2025). Data Analytics for Smart Health-care Systems: Bridging Patient and Provider Needs, *Studies in Computational Intelligence, Springer, Cham*, vol 1224. https://doi.org/10.1007/978-3-031-99946-8_2

Abstracts & Posters

AP3 **Shri Harini Ramesh**, Helene Fournier, Fateme Rajabiyazdi. (2025). An Artificial Intelligence-Enabled Data Visualization System to Explore Patient Engagement Patterns in Cardiac Rehabilitation Programs. *Ottawa Cardiovascular Research Day*.

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, 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

Be a Data Science and AI Health Detective: Discover What Your Body's Telling You Through Data!

Carleton University, Ottawa, Canada

April–May 2025

Grade 8–10 Students • Enrollment: 28 students • Duration: 1-week intensive course

Responsibilities:

- ▶ Independently designed and delivered the full course, including concept, structure, and daily instruction.
- ▶ Developed all teaching materials including course website, slides, worksheets, and hands-on activities [[Course Website](#)].
- ▶ Led interactive sessions combining lectures, live data exploration, and personal dashboard projects.
- ▶ Facilitated collaborative learning through group discussions, projects, and guided exercises.

Graduate Teaching Assistant

SYSC 4906 – Introduction to Data Science and Data Visualization

Carleton University, Department of Systems and Computer Engineering

Fall 2024

Led weekly tutorials on data science and visualization tools, developing instructional slides and conducting hands-on lab sessions to support student learning. Provided individual guidance during lab activities, supervised assessments, and designed a post-course evaluation survey to gather student feedback. Co-authored a publication based on the survey findings, presented at the IEEE VIS EduVis Conference.

Other Courses: CPSC233 - Java Programming | SYSC4504 - Web Development | SYSC 2004 - Object Oriented Software Development | SYSC3600 - Systems and Simulation | SYSC 3610 - Biomedical Systems, Modelling and Control | SYSC 4203 - Bioinstrumentation and Signals | CEG 3136 - Computer Architecture | BMG-5109 - Medical Diagnostic Engineering

Invited Talks

- T7 Guest Lecture — Ethics, Research Methods and Standards for Biomedical Engineering Course** February 2025
Title: A Step by Step Breakdown of Research Process
- T6 Guest Lecture — Advanced Data Visualization Course** October 2023 & 2024
Title: Data Visualization using PowerBI
- T5 Canadian Celebration of Women in Computing Conference (CAN-CWiC)** October 2023
Title: Interactive Data Visualization for Analyzing Virtual Cardiac Rehabilitation Journey of Patients
- T4 IEEE Ottawa Section: Engineering in Medicine and Biology Society** September 2023
Title: Identifying Challenges and Barriers to Virtual Cardiac Rehabilitation Participation
- T3 University of Ottawa: BMG 6996 Biomedical Engineering Seminar** April 2023
Title: Artificial Intelligence Implementation of the Edinburgh Visual Gait Score (EVGS) for use in Cerebral Palsy
- T2 CHEO Research Institute: Bears' Den Innovation Pitch Event** November 2022
Title: Development and Validation of a Remote Video Acquisition and Analysis Protocol Using AI for Gait Evaluation
- T1 The Ottawa Hospital Research Institute: Research Day** September 2022
Title: Development and Validation of a Remote Video Acquisition and Analysis Protocol Using AI for Gait Evaluation

Work Experience

Data Analytics Intern – Braiyt.ai May 2022 – June 2023

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.

SDE Image Processing – Nexmatics May 2021 – August 2021

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 September 2023 – April 2024

Bachelor in Biomedical Engineering, Carleton University

Mentored the student in qualitative research methodology. Provided hands-on training in thematic analysis, including transcript coding, pattern identification, and theme development. Collaboratively analyzed interview transcripts from healthcare providers regarding cardiac rehabilitation barriers. Co-authored research paper published in *Interactive Journal of Medical Research (IJMR)*.

Academic Service

Program Committee Member (12 reviews)

- Symposium on Human-Computer Interaction for Work (CHIWORK) 2026
- IEEE Pacific Visualization Symposium (PacificVis) 2025, 2026
(1 review recognized as "highly useful" by fellow reviewers)
- IEEE VIS Educational Visualization (EduVis) Workshop 2024, 2025

Peer Reviewer (8 reviews)

- ACM Designing Interactive Systems Conference (DIS) 2026
- The Eurographics Conference on Visualization (EuroVis) 2026
- ACM CHI Conference on Human Factors in Computing Systems 2025, 2026

ACM International Conference on Mobile Human-Computer Interaction (MobileHCI)	2025
IEEE VIS: Visualization & Visual Analytics	2025

Scholarships & Awards

International Graduate Tuition Award (\$3,060) – University of Calgary	2026
J. James Mackie Endowment (\$1,500) – Carleton University	2025
Pavel Kalab Scholarship (\$2,800) – Carleton University	2025
Bhargava Family Scholarship (\$4,000) – Carleton University	2023–2025
Vanier Canada Graduate Scholarships (Nominated by the department - Not awarded) – NSERC	2024–2025
International Doctoral Excellence Award (\$26,000) – Carleton University	2023–2025
SYSC Department Admission Scholarship (\$8,000) – Carleton University	2023–2027
Allan Buchanan Scholarship (\$4,800) – Carleton University	2023
International Master’s Student Scholarship (\$6,000) – University of Ottawa	2021–2022
NSERC CREATE-BEST (\$20,000) – University of Ottawa	2021–2023
Semi-finalist, IICDC 2019 (\$200) – Government of India & Texas Instruments	2019
Merit Scholarship (\$1,500) – Anna University	2017

Relevant Coursework

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

Technical Skills

Programming	Python, C, MATLAB, R, JavaScript, HTML/CSS
Data Science & ML	pandas, NumPy, scikit-learn, Keras, PyTorch, TensorFlow
Visualization	D3.js, Tableau, Power BI, Matplotlib, Seaborn, Figma
Databases	PostgreSQL, MySQL, MongoDB, SQLite, Dataverse
Web Development	Django, React
3D & Game Dev	Unreal Engine, Unity 3D, Blender
Research Methods	Semi-structured Interviews, Thematic Analysis, Open Coding
Version Control	Git, GitHub, GitLab
Cloud & DevOps	AWS, Google Cloud, Firebase
Other	LaTeX, Overleaf, BibTeX

Volunteering

Chair – Carleton University @ Engineering in Medicine and Biological Sciences (CU @EMBS)	2024–2025
Revived the student chapter independently in 2024 after it had remained dormant for several years due to COVID-19. Organizing workshops, seminars, and outreach events to promote interdisciplinary collaboration and student engagement in biomedical engineering and health technology.	
Globalink Mitacs Mentor – Mitacs	2023–2025

Guided 24 international undergraduate students during their summer internships at Carleton University (2023, 2024, 2025), helping with relocation and settling-in processes including bank setup and accommodation.

Mentor – *Girls SySTEM*

2023

Provided guidance to explore diverse STEM fields and gain firsthand experience before entering post-secondary education, enabling informed decisions about future career paths.

Social Media & Newsletter Coordinator – *IEEE Ottawa Section*

2023–2024

Kept members updated on recent activities and promoted the IEEE Ottawa Section on LinkedIn.

Mentor – *Canadian Biomaterials Society, Ottawa Student Chapter*

2022

Provided 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.