Harshinee Sriram

Vancouver, BC, Canada

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Education

The University of British Columbia, Vancouver **2022 – 2027 (If the stars so align)**

PhD in Computer Science *Vancouver, BC, Canada*

- Advisors: Margo Seltzer and Xin Tang
- **Research Focus Areas (including but not limited to):** Virtual Cells, AI for Biology, Drug Discovery, and Diagnosis, Multimodal Learning (Video, Text, Gaze/Eye-Movements), Sparse Diagnostic Models, and Interpretable and Explainable ML.

Work Experience

Amazon **Vancouver, BC, Canada**

Applied Scientist II Intern *June 2026 – September 2026*

- Part of the Alexa Daily Essentials (ADE) Science & Analytics team.

Applied Scientist II Intern *June 2025 – September 2025*

- Researched and developed novel **Human-in-the-Loop** ReAct **Agentic Workflows** for Alexa+ using **MCP tool calling** and **Multimodal Foundational Models** to extend generative AI capabilities beyond static interactions.
- Benchmarked performance of agentic workflows against WebVoyager and Online-Mind2Web using **Amazon Nova Act** and **AWS Strands SDK**, to identify critical bottlenecks in current planning and reasoning paradigms.
- Prototyped large-scale integrations with AWS services to validate the scalability of agent-based multimodal systems.

UBC - Amazon AWS Cloud Innovation Centre (CIC) **Vancouver, BC, Canada**

Applied Scientist Intern *September 2021 – April 2025*

- **Digital Strategy Assistant (BC Govt)** [Article] [Code]: Architected a **RAG** pipeline on AWS Bedrock with **Guardrails** to enforce safety alignment and mitigate hallucinations while analyzing high-stakes government educational data.
- **AI Learning Assistant** [Article] [Code]: Engineered a history-aware RAG system using **LLaMa 3.1 70B** and **PostgreSQL** vector stores to model student mastery and deliver personalized, instruction-tuned pedagogical support.
- **Grant Program Analytics** [Article] [Code]: Developed an automated ETL pipeline leveraging **AWS Comprehend NER** and fuzzy matching to construct knowledge graphs from unstructured text, to enable semantic search via **AWS Glue**.
- **Course Flexibility** [Article] [Code]: Fine-tuned a Transformer model on **AWS SageMaker (PyTorch + CUDA)** to evaluate course flexibility; deployed a scalable MLOps workflow that earned a **CUCCIO 2024 Finalist** award.

Research Publications

1. **Harshinee Sriram**, Jon Donnelly, Alex He-Mo, Margo Seltzer, and Xin Tang. "SWARM-FR: Benchmarking Virtual Cell Metrics." Submitted to NeurIPS 2026 Evaluations and Datasets Track.
2. Vedant Bahel, **Harshinee Sriram**, and Cristina Conati. "Personalizing explanations of AI-driven hints to users cognitive abilities: an empirical evaluation." In the 26th International Conference on Artificial Intelligence in Education (AIED) 2025. [Link] *(Best Paper Nominee)*
3. Shih-Han Chou, Miini Teng, **Harshinee Sriram**, Chuyuan Li, Giuseppe Carenini, Cristina Conati, Thalia S. Field, Hyeju Jang, and Gabriel Murray. "Multimodal Classification of Alzheimer's Disease by Combining Facial and Eye-Tracking Data." In Machine Learning for Health (ML4H), pp. 219-232. PMLR, 2025. [Link] *(Spotlight)*
4. Vedant Bahel, **Harshinee Sriram**, and Cristina Conati. "Initial results on personalizing explanations of AI hints in an ITS." In Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization UMAP 2024. [Link]
5. Omair Shahzad Bhatti, **Harshinee Sriram**, Abdulrahman Mohamed Selim, Cristina Conati, Michael Barz, and Daniel Sonntag, "Detecting When a User Disagrees with generated Captions.", In Companion Proceedings of the 26th International Conference on Multimodal Interaction (ICMI), pp. 195-203. 2024. [Link] *(Oral)*
6. **Harshinee Sriram**, Cristina Conati, and Thalia Field. "Classification of Alzheimer's Disease with Deep Learning on Eye-tracking Data." In International Conference on Multimodal Interaction (ICMI), pp. 104-113. 2023. [Link]
7. Anuj Harisinghani, **Harshinee Sriram**, Cristina Conati, Giuseppe Carenini, Thalia Field, Hyeju Jang, and Gabriel Murray. "Classification of Alzheimer's using Deep-learning Methods on Webcam-based Gaze Data." Proceedings of the ACM on Human-Computer Interaction 7, no. ETRA (2023): 1-17. [Link] *(Oral)*
8. **Harshinee Sriram** and Cristina Conati, "Evaluating the overall sensitivity of saliency-based explanation methods.", International Joint Conference on Artificial Intelligence (IJCAI) Workshop on Explainable Artificial Intelligence 2023. [Link] *(Oral)*