

Falah Sheikh

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Education

- Expected 2028 **University of Calgary**, M.Sc. in Computer Science.
Advisor: Fateme Rajabiyazdi
- 2022 – 2026 **University of Calgary**, B.Sc. in Computer Science.

Research Experience

- Aug 2026 – present **HealthVisFutures Lab, Interactions Lab**
Graduate Research Assistant, University of Calgary
Advisor: Fateme Rajabiyazdi
- May 2024 – May 2026 **Data and Network Sciences & Applications Lab**
Undergraduate Research Assistant, University of Calgary
Advisors: Reda Alhajj, Jon Rokne
- *Prompt structure and LLM hallucination* (Sep 2025 – May 2026). Tested GPT-4o, GPT-4o-mini, Claude Sonnet 4, and Claude Haiku 4.5 on six prompt categories (7,150 scored responses). Four trigger categories (false and authority presupposition, completion obligation, constrained directive) had $11.3\times$ the hallucination rate of factual controls (16.3% vs. 1.4%); completion-obligation prompts ranged from 2.0% (Claude Haiku 4.5) to 98.0% (GPT-4o-mini).
 - *Explainable Alzheimer's detection from structural MRI* (Jan – Sep 2025). Benchmarked lightweight models (MobileNetV2, EfficientNetV2B0) to classify coronal MRI slices from 102 ADNI subjects as cognitively normal, early MCI, or late MCI; EfficientNetV2B0 reached 88.0% mean accuracy in 5-fold cross-validation, and Grad-CAM++ maps highlighted regions commonly associated with early-stage degradation.
 - *Lunar age estimation from images* (May 2024 – Jan 2025). Trained CNNs to predict the day of the synodic month (30 classes) from a single lunar image (best accuracy 82.74%).

Publications

Journal Articles

- F. **Sheikh**, A. Al Marouf, J. Rokne, R. Alhajj. Lightweight deep learning models with explainable AI for early Alzheimer's detection from standard MRI scans. *Diagnostics* 15(21), 2709 (2025).
doi:[10.3390/diagnostics15212709](https://doi.org/10.3390/diagnostics15212709)
- Z. Nissar, F. **Sheikh**, A. Al Marouf, J. Rokne, R. Alhajj. Automated lunar age detection through determining the day of the synodic month using convolutional neural networks. *Scientific Reports* 15, 35973 (2025). doi:[10.1038/s41598-025-18165-w](https://doi.org/10.1038/s41598-025-18165-w)

Conference Proceedings

F. Sheikh, A. Al Marouf, R. Alhajj, J. Rokne. NeuroXAI: Lightweight explainable early Alzheimer's detection for resource-constrained clinical settings. *Medical Imaging 2026: Imaging Informatics*, Proc. SPIE 13930, 139301R, Vancouver, Canada (2026). doi:[10.1117/12.3088200](https://doi.org/10.1117/12.3088200)

Awards & Honors

Jan 2026	SPIE Medical Imaging 2026 Student Conference Support (US\$700).
Nov 2025	Community Mental Health and Well-Being Strategy Award (CA\$1,000).
May 2025	Alberta Innovates Summer Research Studentship (CA\$7,500).

Teaching

Fall 2026	Teaching Assistant, CPSC 217: Introduction to Computer Science for Multidisciplinary Studies I, <i>University of Calgary</i>
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