

# Omid Reza Heidari

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## EDUCATION

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**Concordia University, Montreal, QC**  
Master of Science in Computer Science

2023 | Present  
GPA: 3.5/4.00

**Islamic Azad University, Zanzan, IR**  
Bachelor of Engineering in Computer Engineering

2017 | 2022  
GPA: 3.47/4.00

## WORK EXPERIENCE

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**Machine Learning Intern**  
*The University of British Columbia*

*Vancouver, BC*  
Nov 2024 – Present

- Implementing the state-of-the-art models in PyTorch and PyTorch Lightning, such as OmniMotion, Real NLP, Betrayed by Attention, and NeRF on Google Cloud Platform and Compute Canada.
- Reviewed and discussed approximately 5-7 research papers per week, analyzing various approaches to improve the performance and accuracy of previous methodologies.
- Enhanced model accuracy for detecting occluded objects by around 7 %.

**Machine Learning Engineer**  
*Ontario Tech University*

Sep 2024 – Nov 2024

- After 2 months, I was transferred to UBC following my supervisor's relocation to continue research in a new environment.

**Hanyang University**  
*Natural Language Processing Research Intern*

*Seoul, KOR*  
Jul 2024 | Sep 2024

- Assess cultural, gender, religious and ethnic biases in LLMs, emphasizing underrepresented languages and dialects.
- Research regional dialect biases in LLMs; develop evaluation frameworks and assessment methods.
- Assess the performance of different LLMs across dialects and cultures.

**Zanzan University of Medical Science**  
*Data Reserach Analyst*

*Zanzan, IR*  
Jul 2022 | Jan 2023

- Conducted research on Machine Learning and Electroencephalogram signals
- Utilized Welch, Convolution, and Fourier transform, to compute connectivity, power, and amplitude
- Applied low-data techniques, such as data augmentation and transfer learning, to prevent underfitting and improve model performance on limited datasets.

## ACADEMIC EXPERIENCE

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**Concordia University**  
*Teaching Assistant*

*Montreal, QC*  
Jan 2024 | Present

- COMP 6321 - Machine Learning
- COMP 6771 - Image Processing
- COMP 353 - Databases
- COEN 243 - Programming Methodology I
- COMP 248 - Object-Oriented Programming I
- COEN 352 - Data Structures and Algorithms
- COMP 352 - Data Structures and Algorithms

**Sharif University of Technology**  
*Teaching Assistant*

*Tehran, IR*  
Sep 2022 | Feb 2023

- CE 717 - Machine Learning

**Zanzan University**  
*Teaching Assistant*

*Zanzan, IR*  
Sep 2021 | Jun 2022

- Principles Of Database Design
- Digital Logic Design
- Advanced Programming

## SKILLS

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- **Programming Languages** : Python, MATLAB, C++
- **Frameworks**: PyTorch, PyTorch Lightning, Scikit-learn, OpenCV
- **Databases**: MySQL, PostgreSQL, Redis, MongoDB
- **Services**: AWS, GCP, RabbitMQ
- **Languages**: English (fluent), French (conversational)

## PUBLICATIONS

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### 2024

- **Omid Reza Heidari\***, Maria Siddiqua\*, Mennatullah Siam, Leonid Sigal. Pixel-level Self-Supervised Video Understanding. *Work in progress*
- **Omid Reza Heidari**, Yang Wang, Xinxin Zuo. Using ALDI in Security X-ray Images Detection. *Preparing for ICML 2025*
- **Omid Reza Heidari\***, Nihan Anam\*, Azmine Toushik Wasi\*, Taki Hasan Rafi. A Review of Human-Centric Evaluation of Cultural Bias in Indic Languages within LLMs: Rethinking Research Directions. *Submitted to TALLIP*
- **Omid Reza Heidari\***, Li Gu\*, Jiahao Nick Li\*, Yang Wang. Retrieval Augmented Generation for Natural Language Query in Egocentric Videos.

 Selected as the Best Poster at *Mila - Quebec AI Institute*

April 2024

### 2023

- **Omid Reza Heidari**, Ahmadreza Zakerian Zadeh, Mohsen Dadashi. Assessment of Structural Connectivity and Brain Volumes after tDCS in Stroke: A Machine-learning Method