PRESENTED TO:
PHD HIRING TEAM,

FACULTY OF TECHNOLOGY, ART AND DESIGN,
DEPARTMENT OF COMPUTER SCIENCE,
OSLO METROPOLITAN UNIVERSITY

PRESENTED BY:
MOHAMMAD KAOSAIN AKBAR

PHD INTERVIEW ON ARTIFICIAL INTELLIGENCE IN THE FIELD OF LARGE LANGUAGE MODELS IN HEALTH RESEARCH

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Link for the slides: kaosain.com/oslomet

Introduction

Name: Mohammad Kaosain Akbar

Current Role: AI Platform Dev at Desjardins

Location: Montreal, QC, Canada

Place of Birth: Dhaka, Bangladesh

Research Interests: *Human-Computer Interaction (HCI), Machine Learning, Deep Learning, Data Imputation, System Development, Computational Intelligence*

Introduction

Undergraduate Degree: Bachelor of Science in **Computer Science and Engineering**

Institution: North South University, Dhaka, Bangladesh

GPA: 3.84/4.77 (Summa Cum Laude)

Graduate Degree: Masters of Applied Science in **Systems Engineering**

GPA: 3.77/4.30

Institution: Concordia University, Montreal, QC, Canada

Thesis: Non-intrusive Load Monitoring using Machine and Deep Learning Approaches

Introduction

Timeline	Role	Organization
January 2019 to August 2019	Database Developer (Co-op)	Samsung Electronics Bangladesh
	Undergraduate Teaching Assistant	North South University
September 2019 to December 2020	Lecturer	Daffodil International University
May 2021 to May 2023	Graduate Machine Learning Researcher	Applied AI Institute – Concordia University

Publication Record

Mohammad Kaosain Akbar

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Data and Machine Learning Researcher
Verified email at live.concordia.ca

Machine Learning Deep Learning Computational Modeling Data Mining

TITLE	CITED BY	YEAR
A novel non-intrusive load monitoring technique using semi-supervised deep learning framework for smart grid MK Akbar, M Amayri, N Bouguila Building simulation 17 (3), 441-457	30	2024
Prediction of absenteeism at work using data mining techniques M Skorikov, MA Hussain, MR Khan, MK Akbar, S Momen, N Mohammed, ... 2020 5th International conference on information technology research (ICITR …	17	2020
Evaluation of regression models and Bayes-Ensemble Regressor technique for non-intrusive load monitoring MK Akbar, M Amayri, N Bouguila, B Delinchant, F Wurtz Sustainable Energy, Grids and Networks 38, 101294	10	2024
Deep learning based solution for appliance operational state detection and power estimation in non-intrusive load monitoring MK Akbar, M Amayri, N Bouguila International Conference on Industrial, Engineering and Other Applications …	6	2023
ResiDualNet: A novel electric vehicle charging data imputation technique to enhance load forecasting accuracy BM Fahim, MK Akbar, M Amayri Building Simulation, 1-26	4	2025
Assessing the Effectiveness of Supervised and Semi-supervised NILM Approaches in an Industrial Context MK Akbar, M Amayri, N Bouguila, F Wurtz, B Delinchant Proceedings of the 2023 6th International Conference on Computational …	3	2023
Evaluation of Two Novel Supervised Non-Intrusive Load Monitoring Techniques MK Akbar, M Amayri, N Bouguila 2024 IEEE 12th International Conference on Smart Energy Grid Engineering …	1	2024
Short-term EV load forecasting using Kolmogorov Arnold Networks BM Fahim, MK Akbar, M Amayri 2025 IEEE 34th International Symposium on Industrial Electronics (ISIE), 1-6		2025
GAF-TCN NILM: A Novel Approach to Non-Intrusive Load Monitoring Using Image Analysis with Gramian Angular Field and Temporal Convolutional Networks MK Akbar, M Amayri, N Bouguila 2025 IEEE 34th International Symposium on Industrial Electronics (ISIE), 1-6		2025
Non-Intrusive Load Monitoring using Machine and Deep Learning Techniques MK Akbar Concordia University		2023
Mcd-Nilm: A Multi-Scale Clustering and Decoding Approach for Appliance and Ev Energy Disaggregation BM Fahim, MK Akbar, M Amayri Available at SSRN 5377029		

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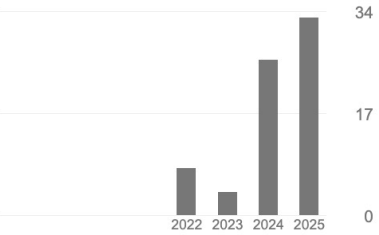

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Co-authors

- Manar AMAYRI, Concordia University
- Nizar Bouguila, Professor
- Benoit Delinchant, Grenoble INP
- Wurtz Frederic, frederic.wurtz@g2elab.grenoble-…
- Dr. Sifat Momen, Professor, Department of Electric…
- Nabeel Mohammed, North South University
- Dibya Prokash Sarkar, North Island College

Summary of My Previous Research

- Conducted research on Non Intrusive Load Monitoring using deep learning models such as CNN, BiLSTM and TCN for energy disaggregation
- Developed ResiDualNet, a residual BiLSTM CNN model for missing data imputation in electric vehicle charging datasets that improved forecasting accuracy
- Designed Bayesian Ensemble Regressor and other regression models for appliance level power estimation and anomaly detection
- Created GAF TCN based framework that integrates temporal encoding for better state detection and interpretability
- Completed undergraduate capstone titled “I Am Here,” a user centered and privacy preserving security service for emergency support

Why I Am Interested to do PhD in this domain

- Fascinated by the intersection of Artificial Intelligence and Healthcare, especially how LLMs can assist real-world medical practice.
- Strong motivation to work on trustworthy, evidence-based AI systems that can make health recommendations reliable and transparent.
- Passionate about AI for societal impact, particularly in improving accessibility to physiotherapy and rehabilitation support.

Alignment of My Experience

- Previous experience with machine learning and deep learning models, including model explainability and time-series forecasting.
- Academic background in AI-driven data science aligns perfectly with the project's focus on Retrieval-Augmented Generation (RAG) and knowledge-grounded reasoning.
- Excited to apply technical expertise to a multidisciplinary project combining AI, healthcare, and human-centered design.

Tentative Career Plan

- Short-term: Contribute to impactful publications and collaborative projects under your supervision.
- Medium-term: Continue as a postdoctoral researcher in LLM and AI in Health Care
- Long-term: Become a professor and establish my own research group focused on designing ML models and resolving Health Care challenges using AI

Thank You Very Much