

Md Kamrul Islam

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EDUCATION

Erasmus Mundus Master Degree in Big Data Management and Analytics (BDMA)

Semesters 3 & 4 – CentraleSupélec, Université Paris-Saclay <i>Master Sciences de l'Ingénieur</i>	Gif-sur-Yvette, France Sept 2024 – Present
Semester 2 – Universitat Politècnica de Catalunya <i>Master Erasmus Mundus in Big Data Management and Analytics</i>	Barcelona, Spain Feb 2024 – July 2024
Semester 1 – Université libre de Bruxelles <i>Master of Science in Computer Science and Engineering</i>	Brussels, Belgium Sept 2023 – Jan 2024
Sichuan University <i>Bachelor of Engineering in Software Engineering (Average grade: 87/100)</i>	Chengdu, China Mar 2018 – Dec 2021

RESEARCH EXPERIENCE

Research Engineer Intern <i>Laboratoire Images, Signaux et Systèmes Intelligents, Université Paris-Est Créteil</i>	Paris, France Apr 2025 – Present
<ul style="list-style-type: none">Building an LLM-assisted solution that extracts security and data-sharing requirements from multimodal inputs to automatically generate BPMN workflows enriched with semantically valid cybersecurity annotations and recommend context-specific data sharing protection mechanisms.	
Technical Skills: Python, React-JS, LangChain, LLM, Retrieval-Augmented Generation, SecBPMN	
Graduate Research Assistant Project Link <i>Laboratoire Interdisciplinaire des Sciences du Numérique (LISN), CentraleSupélec</i>	Gif-sur-Yvette, France Oct 2024 – Feb 2025
<ul style="list-style-type: none">Project Title: "Enhancing Medical Image Clustering Using Geometric Deep Learning"Developed a novel deep clustering architecture that integrates Group Equivariant CNNs to enhance self-supervised learning for medical image analysis using the NIH chest X-ray datasets.Demonstrated that encoding geometric symmetries directly in the network architecture eliminates the need for explicit data augmentation while improving clustering performance and generalization.Built and optimized a scalable training pipeline using PyTorch's DistributedDataParallel and automatic mixed precision technologies, enabling efficient model training across multi-GPU systems.	
Technical Skills: PyTorch, OpenCV, LaTeX, HPC	

PROFESSIONAL EXPERIENCE

Software Engineer Intern <i>Chengdu Suncap Co., Ltd</i>	Chengdu, China Dec 2020 – May 2021
<ul style="list-style-type: none">Developed and optimized data pipelines using <i>Apache Spark</i> to process and analyze large data sets.Improved data preprocessing workflows to support algorithm accuracy, achieving a <i>10% increase</i> in predictive model performance.Collaborated with cross-functional teams using <i>Agile Scrum</i> methodology to ensure best practices in code quality and version control.	
Technical Skills: SciKit-Learn, Apache Spark, Agile Scrum, Jira, Git	

TECHNICAL SKILLS

Programming Languages & Frameworks: Python, C/C++(OOP), SQL, Cypher, SPARQL, JavaScript, React-JS
Machine Learning & Deep Learning: LLMs, Pytorch, TensorFlow, Keras, Langchain, Scikit-Learn, OpenCV
Big Data & Cloud Platforms: PySpark, Hadoop, Apache Airflow, Microsoft Azure, Microsoft Fabric, HPC
Databases: SQL Server, PostgreSQL, Neo4j, GraphDB
Data Analytics & Visualization: Pandas, NumPy, Matplotlib, Seaborn, Power BI, Tableau, Streamlit, D3.js
Project Management & Collaboration: Docker, Agile, Scrum, Git, Jira

PROJECTS

DigiScan360

Feb 2024 – June 2024

Developed a competitive intelligence platform and pitched it as a startup prototype at UPC's entrepreneurship initiative.

[Project Link](#)

Technical Skills: PySpark, LLMs, Microsoft Fabric, Azure Data Factory, Power BI, GraphDB, SPARQL

Anomaly Detection in Diesel Train Cooling Systems

Sept 2023 – Dec 2023

Developed unsupervised models to detect anomalies in train cooling systems for the Belgian National Railway Company (SNCB).

[Project Link](#)

Technical Skills: Pandas, Numpy, Matplotlib, Seaborn, scikit-learn, Tableau, Anomaly Detection

Brain Tumor Detection and Classification by Using CNN

Sept 2021 – Dec 2021

Achieved 98% accuracy in brain tumor detection using a custom CNN model.

[Project Link](#)

Technical Skills: TensorFlow, Keras, Python, OpenCV

AI-Based Disease Prediction System

Mar 2021 – June 2021

Built a web-based symptom checker predicting over 40 diseases with machine learning algorithms.

[Project Link](#)

Technical Skills: Python, Django, ReactJS, Machine Learning, REST APIs

PUBLICATIONS

C. K. Sah, L. Xiaoli, M. M. Islam and **M. K. Islam**, "Navigating the AI Frontier: A Critical Literature Review on Integrating Artificial Intelligence into Software Engineering Education," 2024 36th International Conference on Software Engineering Education and Training (CSEET), Würzburg, Germany, 2024, pp. 1–5.
doi:10.1109/CSEET62301.2024.10663054

EXTRA-CURRICULAR ACTIVITIES

Twelfth European Big Data Management & Analytics Summer School (eBISS 2024) Padova, Italy

[Poster Link](#) | [Paper Link](#) | [University of Padova](#)

July 2024

- Participated in the fully-funded summer school sponsored by the European Commission, focused on advanced topics in Big Data, AI, and Business Intelligence.
- Presented a research poster titled "Applying Knowledge Graphs in Retrieval-Augmented Generation (RAG)".

AWARDS & SCHOLARSHIPS

European Union

Sept 2023 – Sept 2024

Erasmus Mundus Partner Country Scholarship

- Awarded a fully-funded scholarship (one of the 24 selected awardees from more than 800 applicants), covering tuition, living expenses, and academic support for the Erasmus Mundus Joint Master Degree program.

Chinese Government

Mar 2018 – Mar 2022

The Belt and Road Initiative Scholarship

- Received a comprehensive 4-year scholarship covering tuition, accommodation, and academic resources during undergraduate studies.

LANGUAGES

English: C1 (Advanced proficiency), **Chinese:** B2 (Intermediate proficiency), **French:** A2 (Elementary Proficiency)

REFERENCES

Prof. Sami Souihi

Associate Professor, Université Paris-Est Créteil (UPEC)

Relationship: Master Thesis Supervisor

Email: Sami.Souihi@cea.fr

Prof. Nacera Seghouani

Professor, CentraleSupélec, Université Paris-Saclay

Relationship: Big Data Research Project Supervisor

and Instructor for "Massive Graph Management and Analytics" course

Email: Nacera.Seghouani@centralesupelec.fr