





REDWANUL KARIM

M.Sc. in Artificial Intelligence (ongoing)



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Experience

- **Pattern Recognition Lab, FAU Erlangen-Nürnberg**
Student Assistant
June 2025 – Present
Erlangen, Germany
 - » Develop large-scale Knowledge Graphs using Neo4j and Cypher query language
 - » Implementing physics-informed graph-based machine learning models to predict AC power flow dynamics
 - » **Supervisor:** Changhun Kim, M.Sc., Researcher at Department of Computer Science, FAU Erlangen-Nürnberg
- **Fraunhofer IIS**
Student Assistant
Apr 2025 – Present
Nürnberg, Germany
 - » Incorporating secure federated learning with GNSS data for jammer detection and localization
 - » Develop secure federated learning for collaborative swarm intelligence among autonomous drones
 - » Implementing methods to identify authorized drones and prevent malicious participation in the swarm
 - » **Supervisor:** Dr.-Ing. Tobias Feigl, Head of the Robotics Lab at Fraunhofer IIS, Nürnberg
- **Samsung Research, Bangladesh**
Senior Software Engineer
Dec 2019 – Aug 2023
Dhaka, Bangladesh
 - » Developed commercial software solutions for Samsung Galaxy Book, Wearables and Galaxy Phones, e.g., Samsung Account, SmartThings, Samsung Flow
 - » Contributed in designing software architectures and led the UI development team
 - » Developed back-end APIs for Single-Sign-On (SSO) Protocol for Samsung Account
 - » **Technologies:** .NET, C#, UWP, MySQL, Entity Framework, REST APIs, React.js, OAuth
- **North South University**
Research Assistant
Sep 2019 – Dec 2019
Dhaka, Bangladesh
 - » Published a journal on IEEE Open Access in the field of NLP
 - » Developed AI-based application—‘Master Moshai’, funded by the ICT Ministry of the Government of Bangladesh
 - » Mentored undergraduate students in their final year research projects
 - » **Skills:** Machine Learning, NLP, Data Analysis & Visualization, PyTorch, TensorFlow, Python, Flask, Django, Research Proposal & Paper Writing
 - » **Supervisor:** Dr. Nabeel Mohammed, Assistant Professor, North South University



Education

- **Friedrich Alexander Universität Erlangen-Nürnberg**
Master of Science in Artificial Intelligence
Oct 2023 – Present
- **North South University**
Bachelor of Science in Computer Science & Engineering
Jan 2015 – Sep 2019

Relevant Coursework

-  Deep Learning
-  Artificial Intelligence
-  Neural Networks
-  Design & Analysis of Algorithms
-  Software Engineering
-  Advanced Data Engineering

Publications

- **A Step towards Information Extraction: NER in Bangla using Deep Learning**
Redwanul Karim, M.A. Muhaiminul Islam, Sazid Rahman, Saif Ahmed Chowdhury, Kalyan Roy, Adnan Al Neon, Md. Sajid Hasan, Adnan Firoze, Rashedur M. Rahman DOI: 10.3233/JIFS-179349 Publisher: IOS Press
- **Banner: A Cost-Sensitive Contextualized Model for Bangla Named Entity Recognition**
Imranul Ashrafi, Muntasir Mohammad, Arani Shawkat, Galib Md. Azraf Nijhum, Redwanul Karim, Nabeel Mohammed, Sifat Momen DOI: 10.1109/ACCESS.2020.2982427 Publisher: IEEE Access

Projects

- 🔗 **Influence of Solar Activity on Earth's Climate** Sept 2024
Technologies: Python, Matplotlib, ETL, CI/CD, Data Engineering, Github Actions, Numpy, Pandas
- 🔗 **Master Moshai—An Artificially Intelligent Educational Tool** Dec 2019
Technologies: NLP, LLM, Python, PyTorch, Numpy, Pandas, Flask, Node.js, Express, React.js, MongoDB, Github

Technical Skills

- 📦 **Operating Systems:** Windows and Linux
- 📦 **Programming Languages:** Python, C/C++, C#, JavaScript, SQL
- 📦 **Frameworks:** PyTorch, Keras, Sci-kit learn, .NET, React.js
- 📦 **Data Analysis and Visualization:** Pandas, Seaborn, Matplotlib, Numpy.
- 📦 **Others:** gRPC, Git, Docker, Kubernetes, CI/CD, MLFlow, MLOps, Design Patterns

Certifications

- 🔗 **Generative AI with Large Language Models (by deeplearning.ai)** Oct 2024
- 🔗 **Generative Adversarial Networks (GANs) Specialization (by deeplearning.ai)** Sept 2024
» Build Basic Generative Adversarial Networks
» Build Better Generative Adversarial Networks
» Apply Generative Adversarial Networks
- 🔗 **Machine Learning Engineering for Production (MLOps) Specialization (by deeplearning.ai)** Aug 2024
» Machine Learning in Production
» Machine Learning Data Lifecycle in Production
» Machine Learning Modeling Pipelines in Production
» Deploying Machine Learning Models in Production
- 🔗 **Deep Learning Specialization (by deeplearning.ai)** Dec 2019
» Neural Networks and Deep Learning
» Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
» Structuring Machine Learning Projects
» Sequence Models
» Convolutional Neural Networks

Awards and Participation

- 🏆 On Jul, 2023 received **Global Korea Scholarship (GKS) 2023** to pursue MS in AI at UNIST
- 🏆 On Mar, 2022 achieved **Professional Level** in *Samsung Software Competency Test (SWC)*
- 🏆 On Oct, 2021 was selected as **Icon of the Month** for Sept–Oct, 21 at *Samsung Research, Bangladesh*
- 🏆 On 2019 received **Grant for the project—Master Moshai** from the *ICT Division, Government of Bangladesh*
- 🏆 On 2018 participated in **ACM-ICPC Dhaka Regional Site**
- 🏆 On 2017 participated in **ACM-ICPC CUET NCPC Bangladesh**

Language

- 🏆 **English:** IELTS - 7.0 (overall)
- 🏆 **Bangla:** Native