Nasik Sami Khan

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Professional Summary:

Master of Computer Science graduate with **2+ years of hands-on experience in AI/ML research, specializing in Generative AI, Large Language Models (LLMs), Natural Language Processing (NLP), and scalable software solutions.** Published **six peer-reviewed** papers in the AI/ML domain. Skilled in **Python, C#, cloud platforms, and full-stack development.** Proven expertise in **designing and deploying machine learning models**, with a strong track record in **model optimization, data-driven insights**, and **advanced AI techniques** for real-world applications. Passionate **about deploying scalable AI solutions** with measurable impact (e.g., **47% accuracy gain in RAG pipeline**).

Technical Skills:

- **Programming Languages:** Python, C#, C++, Java, JavaScript, HTML, CSS
- **AI/ML Frameworks & Libraries:** TensorFlow, PyTorch, Scikit-learn LangChain, LlamaIndex, Streamlit, Flask, Django
- **Software Development frameworks & Libraries:** ASP.NET (MVC, Core, WebForms), Entity Framework, Dapper
- **Tools & Technologies:** Docker, RabbitMQ, Jenkins, Tableau, Power BI, Excel VBA, Windows Server, Linux
- **Databases**: MySQL, Oracle, MongoDB, Qdrant, ChromaDB
- **Cloud Technologies**: AWS (S3, EC2, IAM), Heroku
- **Developer Tools**: Git, Visual Studio Code, Postman
- **Others:** CI/CD Pipelines, Microservices Architecture, RESTful APIs, Elasticsearch

Professional Experience:

University of Regina

Graduate Research Assistant: Networking Lab at UofR. Supervised by Dr. Nashid Shahriar. ***(Jan 2023 – May 2025)***

- Published **four peer-reviewed** papers in journals and conferences.
- **Runner-up** position at "Intrusion and Vulnerability Detection in SDN" challenge by ITU AI/ML in 5G.
- **Silver Rank** at "Specializing Large Language Models for Telecom Networks" challenge by ITU AI/ML in 5G.
- Built Telecom domain **QA Rag system** with **47% accuracy gains** over baseline.
- Developed LLM-driven incident classification system (BERT + RAG) for telecom tickets, **improving F1-score** by **14%.**
- Built a hierarchical **intrusion detection system** (CNN + Random Forest) with 92% F1-score.

Computer Science Coach at Global Learning Centre*:* Mentored **over 100** undergrad **CS students** regarding their academic coursework, academic advising, and career roadmaps. ***(Aug 2023 – Apr 2025)***

Classroom Technical Support*:* Resolved **10+ technical issues** weekly, improving hybrid learning experience for **200+ students.** ***(Jan 2024 – Apr 2024)***

Teaching Assistant*:* Introduction to Computers, Web and Database Programming, Intro to Data Science, Intro to Operating Systems, Computer Networks, Programing Language Concepts, Software Engineering Methodology, Cloud Computing & Applications, Digital Networks. ***(Jan 2023 – Apr 2025)***

Lab Instructor: Led hands-on learning experiences for Object-Oriented Design across four sections, with a combined student body of over 80 individuals. Conducted lab sessions and oral assessments to reinforce understanding of course material and foster student engagement. ***(Jan 2025 – Apr 2025)***

D.P.O. International Sdn Bhd - *(Multinational e-commerce business company)* ***(Sep 2021 – Jan 2023)***

Software Engineer *Kuala Lumpur, Malaysia*

- **Developed and maintained scalable ASP .NET applications** using **C#** and **Microsoft SQL Server**.

- **Optimized transaction processing** by integrating microservices, resulting in a **37% reduction in processing time**.
- **Designed and built RESTful APIs**, ensuring seamless integration between microservices for **real-time transactions**.
- **Implemented RabbitMQ** to improve communication between distributed systems, enhancing data consistency.
- **Integrated Docker** for containerization and **Elasticsearch** for improved search functionality and data indexing.
- Conducted **software testing and research** on emerging technologies for continuous improvement and innovation.

DHL Asia Pacific Shared Service Centre ***(Feb 2021 – Aug 2021)***

Software Engineer (Intern) at BPO Department *Kuala Lumpur, Malaysia*

- **Developed internal software applications** using **ASP .Net Web Form** and **MVC framework** with **C#**.
- **Converted legacy Excel VBA macros** to scalable **.Net web applications**, enhancing functionality and maintainability.
- **Resolved IT tickets** and **debugged existing applications**, ensuring minimal downtime and system reliability.
- Conducted **unit testing** to validate application functionality and improve overall quality.

Academic and Personal Projects:

Telecom Question Answering with Retrieval-Augmented Generation: Developed a novel telecom-specific **multi-modal RAG** pipeline combining **finetuned embedding models and LLMs** to enhance **QA** accuracy on 3GPP documents. Achieved **a 47% improvement in accuracy** compared to the baseline. Used **Colbert, Matryoshka Representative Learning, Phi2, ChromaDB** for the **RAG** pipeline.

Hierarchical Network Intrusion Detection System: Built a hierarchical **IDS** leveraging a **CNN-based classifier** to distinguish "large" vs. "small" attack groups, then applying a **ResNet-style CNN** and **Random Forest** to each group, that achieved **≥ 92%** overall F1 score, improving minority attack group's F1 score by **22.5%** on a real SD-WAN dataset.

Heritage Hive (Full Stack Development Project): Developed an e-commerce platform using **Django, Python, HTML, CSS, JavaScript**, and **Qdrant** to connect local sellers with global customers. Implemented software engineering **design patterns** to manage product notifications and account creation, enhancing **AI-based** product search capabilities with **semantic search**.

LLM-Driven Telecom Incident Management Classification: Built a multi-label classification pipeline using **RAG** to predict four incident ticket types for IMTs from a real Canadian telecom dataset. Implemented a **BERT-based** model with **Bayesian feature-selection**, boosting minority-class **F1 by over 14%**. Leveraged a **Phi-2** model to achieve a further **12.7% F1 gain**.

Education:

University of Regina ***(Jan 2023- May 2025)***

Degree: Master of Computer Science – Thesis Route *Regina, Saskatchewan*

GPA: 88.40%

International Islamic University Malaysia ***(Jun 2017- Aug 2021)***

Degree: Bachelor of Computer Science *Kuala Lumpur, Malaysia*

CGPA: 3.62 / 4.00

Awards & Scholarships:

- **Fully Funded** Graduate Research Scholarship & **Departmental Grant** (Winter 2023 – Winter 2025)
- **Saskatchewan Innovation and Excellence Graduate Scholarship** - Fall 2023
- **GSA Travel Award** & **FGSR Graduate Student Travel Award** to attend **IEEE GLOBECOM 2024** in **Cape Town.**

Extra-Curricular Activities:

- **Vice President - Culture**: University of Regina Bangladeshi Students' Association ***(Sep 2023 – Oct 2024)***
- **International Peer Advisor** at UR International. Organized 3 orientation events, volunteered at the airport welcome booth for 4 semesters, and volunteered at 3 other international events. ***(Jan 2024 – Apr 2025)***
- **Volunteer at IEEE Canada**: IEEE Conference CCECE 2023

References: Available upon request