

There were mornings I remember walking to school in Kabul as explosions broke the silence. Those moments taught me early that uncertainty is not theoretical; it shapes how people learn and how systems behave. That realization became the foundation of my academic direction: understanding dynamic environments, anticipating instability before they emerge, and building tools that strengthen resilience. This path brought me to the United States as a Barry University Stamps Scholar, one of the most competitive full-ride merit awards in the country and now guides my pursuit of graduate study at the Mohamed bin Zayed University of Artificial Intelligence.

MBZUAI's Master of Science in Computer Science offers the ideal environment for my development at the intersection of artificial intelligence and cybersecurity. The university's emphasis on trustworthy AI, adaptive learning systems, and rigorous methodology aligns directly with my ambition to build models capable of detecting, predicting, and explaining threats within real-world infrastructures. I am drawn to MBZUAI not only for its scientific depth but also for its integration into the UAE's national AI strategy, its connection to industry, and its mission to produce research with global impact.

Academically, I have developed a strong foundation in computer science with specialization in cybersecurity, supported by a 3.97 GPA. My coursework includes software engineering, data structures, networking, biometrics, applied cryptography, and digital forensics. For my senior project, I developed a secure enterprise-style Java portal with role-based access control, encryption, audit logging, and a normalized SQL backend. I have also gained practical experience in vulnerability assessment, forensic analysis, and log-based anomaly investigation. These experiences strengthened my understanding that effective security requires more than responding to incidents. It requires anticipating behaviors before vulnerabilities are exploited.

This idea of prediction rather than reaction shaped my primary research project: Stock Market Analysis and Prediction Using Machine Learning and Deep Learning. While centered on financial time series, it mirrors cybersecurity challenges such as noisy signals, nonstationary behavior, subtle anomalies, and drift. I implemented Ridge Regression, XGBoost, Random Forests, LSTMs, CNNs, and hybrid CNN-LSTM architectures to compare performance across temporal, classical, and deep models. Through this work I developed a deeper understanding of temporal representation, uncertainty calibration, and explainability. These principles directly inform my interest in predictive cyber defense. I will present this research at the CURO Symposium 2026 at the University of Georgia and the Barry STEM Symposium 2026.

Building on that foundation, my final undergraduate semester is dedicated fully to applied cybersecurity research. Under faculty supervision, I will conduct a complete vulnerability assessment using a dedicated Kali Linux environment equipped with penetration-testing and network analysis tools. This project will allow me to analyze real attack surfaces, understand adversarial behavior, and study system weaknesses. Combined with my predictive modeling experience, it provides the technical backbone I hope to expand at MBZUAI.

To organize and present my research development, I built AftabOS, a deployed research portfolio that structures my predictive pipelines, interactive analytics, and cybersecurity research roadmap. It reflects my ability to build transparent, organized systems and translate conceptual ideas into deployable tools.

Beyond academics, leadership has shaped the way I collaborate and communicate in technical environments. I founded and preside over the AI Society at Barry University, coordinate projects in the AI Center and DX Lab involving machine learning, XR, and data analytics, and mentor students through hands-on workshops. I also co-facilitate Sunday Discoveries, a mentorship program supporting Afghan refugee youth through education and technical literacy. These experiences strengthened my ability to explain complex ideas, work effectively in teams, and contribute positively to research communities. I hope to bring these qualities to MBZUAI's collaborative environment.

During the MSc in Computer Science, my short-term goal is to build a rigorous foundation in intelligent security systems by strengthening my technical depth in machine learning, systems security, and data-driven behavioral modeling. I intend to contribute to faculty-led projects on privacy-aware learning, secure AI pipelines, or robust ML systems, and develop a first research prototype for drift-aware threat prediction. My aim is to produce publishable work and prepare a well-defined research direction for my PhD.

My long-term goal is to pursue a PhD and become a researcher and educator. I aim to develop predictive cybersecurity systems that integrate temporal modeling, behavioral analytics, and probabilistic inference while maintaining interpretability through attention-based and XAI techniques. I hope to evaluate these systems using datasets such as UNSW-NB15, CICIDS2017, and TON-IoT for metrics including precision, recall, ROC-AUC, and real-time performance within SOC environments. Ultimately, I want to contribute to global digital resilience through secure and trustworthy AI.

My intended research direction naturally intersects with the expertise of multiple MBZUAI faculty. Professor Ting Yu's contributions to privacy aware machine learning, access control for data driven models, and policy stewardship frameworks directly inform the challenge of deploying predictive systems in security critical environments. Professor Abdulrahman Mahmoud's work on intelligent security analytics, attack surface modeling, and adaptive monitoring is closely related to my goal of anticipating malicious behavior before compromise occurs. Professor Nils Lukas's research on robustness, trustworthy evaluation, and drift sensitive learning provides the methodological grounding needed to ensure that predictive cybersecurity systems remain reliable in dynamic settings. These faculty represent the technical pillars that would strengthen my work: privacy, security analytics, and robust model design.

Abu Dhabi is becoming a global hub for research and technological innovation, and MBZUAI stands at the forefront of that transformation. I come from a background where opportunities were limited, but discipline and determination have been constant. The scholarship that allowed me to study in the United States changed my trajectory, and I have worked to honor that opportunity through academic excellence and service. I now hope to bring the same commitment to MBZUAI, learning deeply, contributing purposefully, and advancing research that strengthens the future.

From navigating instability in Kabul to analyzing complex signals in data, my journey has been about transforming uncertainty into structured understanding. At MBZUAI, I hope to turn that journey into a mission: building intelligent and trustworthy systems that enhance digital security on a global scale.