MUQADDAM AAQIL SHERIFF

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Summary

- **Aspiring PhD student with a strong interest in advancing research and innovation across computer science and related fields.**

Skills

- Python | SQL | Shell Scripting | Pandas | NumPy | Seaborn | pdfplumber | regex | Schema Design | Relational Databases | Git | Bash
- MSSQL | MySQL | PostgreSQL | MongoDB | Snowflake | Redshift | BigQuery | Data Warehousing | Data Migration | LLM | FastAPI
- AWS (S3, Glue, RDS, Redshift, EC2) | Cloud Computing | Flask | HTML | CSS | Flutter | Jinja2 | Teleport
- JSON | Data Cleaning | Data Preprocessing | Data Validation | CI/CD | Time Series Analysis | FB Prophet | Data Analysis | ANN | CNN

Publications

- **"*Analysis to Find Relationship Between Mental Trauma, Rape, and Suicide*"** – *Springer Nature, 2023*
- **"*Integrating Fuzzy Logic with Supply Chain Management*"** – *IEEE, 2023*
- **"*A Comparative Analysis on the Prediction of Heart Failure using Machine Learning Algorithms*"** – *IEEE, 2024*
- **"*Automated Wheat Leaf Disease Detection Using Deep Learning with TensorFlow and Keras*"** – *IEEE, 2024*
- **"*Text-to-Cadence: Synthesizing Rhythmic Voice Through Tacotron2 and Waveglow*"** – *IEEE, 2024*
- **"*Optimizing Event Management Application through Data Analytics Driver and Dynamic Exploration* – *IEEE, 2024***

Experience

PhD. Research Associate — **Psybersecurity Lab** — *El Paso, TX , USA* — **08/2025 - Present**

- Conducted data-driven analysis of **Sunk Cost Fallacy** in cyber-adversarial decision-making, examining how prior investments influence attackers' persistence and escalation behavior.
- Investigated the role of **human and cognitive biases** (with emphasis on Sunk Cost Fallacy and Default Effect) in shaping cyber attacker's choices under uncertainty and risk.
- Analyzed how **human errors, behavioral vulnerabilities, and decision biases** can be systematically leveraged to design more effective and psychologically informed cyber-defense mechanisms.
- Applied statistical modeling and experimental analysis to study **default effects, association bias, and positional bias** across multiple cyber-attack scenarios.
- Performed cluster-based and comparative analyses to identify **behavioral patterns across attacker expertise levels**, demonstrating the persistence of cognitive biases even among technically skilled adversaries.
- Collaborated on data interpretation, and manuscript preparation for **behavioral cybersecurity research** focused on adversarial cognition and decision biases.

Doctoral Assistant — **Graduate School - UTEP** — *El Paso, TX , USA* — **08/2025 - Present**

- Designing and building an **end-to-end database system** for graduate school operations, focused on tuition remission, student employment, enrollment, and eligibility tracking.
- Architecting **relational database schemas in MySQL** to model complex institutional relationships across academic, employment, and policy-driven datasets.
- Developing and integrating **automated ETL pipelines** to streamline tuition remission processing, targeting a **~70% reduction in manual workload**.
- Implementing scalable data workflows using **Microsoft Fabric** to support data ingestion, transformation, and analytics across administrative systems.
- Performing extensive **data preprocessing, validation, and normalization** to ensure accuracy, consistency, and compliance with institutional requirements.
- Optimizing SQL queries and data models to support **reporting, analytics, and operational decision-making** for graduate school administration.

Software Developer (Data) — **Brainvault Technologies** — *Chennai, TN , INDIA* — **07/2024 - 07/2025**

AI Powered Cloud Data Migration Engineering

- Designed, maintained, and optimized **automated data migration pipelines for TravelNet Solutions**, using **Python (Pandas, NumPy), SQL,** enabling smooth transitions from **50+ legacy PMS platforms** to **modern target systems reducing manual effort by 70%**.
- Developed Bash-Teleport automation scripts that cut sandbox refresh and validation time by **60%**, improving developer productivity and environment parity. Led **global Agile teams**, delivering **10+ releases with 100% sprint velocity and 95% stakeholder satisfaction**.
- Engineered an **AI-driven migration platform** using scikit-learn, reducing **manual data mapping efforts by 70% and accelerating migration timelines by 40%**.
- Deployed and orchestrated **20+ microservices** via **Docker & Kubernetes**, ensuring **99.99%** uptime and enabling zero-downtime rolling updates in staging/production. Containerized **ETL with Docker**, automated **CI/CD via GitHub Actions.**

Web - PDF - Data Extraction and LLM Integration

- Built a scalable ETL pipeline to extract structured data from **900K+** unstructured legal PDFs using pdfplumber , regex, and **LLMs like ChatGPT-3.5 Turbo via OpenAI API**.
- **Leveraged large language models (LLMs)** for context-aware field extraction and classification, **achieving 99%+ accuracy and reducing manual effort by 80%.** Loaded structured and validated data into **PostgreSQL** production databases. **versioning** to ensure long-term reliability and auditability. Containerized **ETL with Docker**, automated **CI/CD via GitHub Actions.**

- Designed and built a **full-stack ETL frontend** using **Python Flask, FastAPI, HTML5, CSS3, and Jinja2**, enabling users to trigger, monitor, and manage extraction workflows via a browser interface.
- **Optimized SQL, indexing**, and Python multiprocessing **to cut ETL runtimes by 50%**, enabling the **ingestion of 100K+ records/hour**.

Network Engineer Intern | **VJ Networks** | *Chennai, TN, INDIA* | **01/2024 - 04/2024**

- Configured **network switches** and **routers**, and supported core network infrastructure to maintain stability and high-performance.

Education

PhD Computer Science | **University of Texas at El Paso - 4/4** | *El Paso, TX, USA* | **08/2025 - Present**

Bachelor of Engineering - CS | **Anna University - 3.8/4.0** | *Chennai, TN, INDIA* | **08/2020 - 05/2024**

Projects

- **LLM-Based Automated Information Extraction:** Built an LLM-powered PDF data extraction pipeline (Gemini, Python, regex) with **99%+ accuracy;** deployed to MySQL with full validation and schema tracking.

Tech Stacks : Gemini LLM, Python, pdfplumber, Regex, MySQL, SQL, Prompt Engineering, Data Validation, Schema Versioning

- **Analyzing second hand car sales using ANN and fb prophet :** Developed **ANN** and **Prophet-based** models for car price prediction and trend forecasting, improving accuracy through feature engineering.

Tech Stacks : Python, ANN, Facebook Prophet, Pandas, Scikit-learn, MLflow, Plotly, Seaborn, Time Series Analysis, Forecasting

- **Walmart sales time series prediction using fb prophet :** Forecasted Walmart sales using **Facebook Prophet**, incorporating seasonality/promotions; visualized results with Plotly and Seaborn.

Tech Stacks : Python, Facebook Prophet, Time Series Forecasting, Pandas, Scikit-learn, Plotly, Jupyter, MLflow, Data Visualization

- **Analysis of the Relationship Between Mental Trauma, Rape, and Suicide :** Analyzed social data (rape, trauma, suicide) using **Python** and **EDA techniques** to uncover key correlations and societal patterns.

Tech Stacks : Python, Pandas, NumPy, Matplotlib, Seaborn, Data Cleaning, EDA, Statistical Analysis, Git, Social Analytics

Invited Talks

- Delivered an invited talk on "**Importance of Writing Research Papers**" at Rajalakshmi Engineering College as part of Alumni Talks.
- Delivered an invited talk on "**Unveiling Research Problems and Crafting Impactful Papers**" at SRM IST, Vadapalani.

International Conference Presentations

- **"Analysis To Find Relationship Between Mental Trauma, Rape, and Suicide"** at 7th International Conference on Smart Trends in Computing and Communications (SmartCom 2023) Jaipur, India.
- **"Integrating Fuzzy Logic With Supply Chain Management"** at 2023 International Conference on Research Methodologies in Knowledge Management, Artificial Intelligence, and Telecommunication Engineering (RMKMATE) - Chennai, Tamil Nadu India.
- **"A Comparative Analysis on the Prediction of Heart Failure using Machine Learning Algorithms"** at the International Conference on Mobile Computing and Sustainable Informatics (ICMCSI 2024) - Lalitpur, Nepal
- **"Automated Wheat Leaf Disease Detection Using Deep Learning with TensorFlow and Keras"** at the Recent Advances in Science, Engineering, and Technology (ICRASET - 2024) - Karnataka, India

Judged Events

- **Served as an International Judge** for the *Google Developer Student Clubs (GDSC) "Bit & Build" Hackathon*, evaluating finalist teams on innovation, technical execution, and real-world problem-solving impact.

Awards

- **Awarded a Memento for Serving as an International Judge** at the *Google Developer Student Clubs (GDSC) "Bit & Build" Global Hackathon*, evaluating innovative projects based on technical depth, creativity, and real-world applicability.
- **Received an IEEE Memento for Delivering an Invited Talk** titled *"Importance of Writing Research Papers"* at **Rajalakshmi Engineering College**, as part of the Alumni Talks series.

Reviewer-Invitations

- I have also been Invited as a peer reviewer for various International Conferences in the field of Computer Science