Mahtab Khan

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Education

University   **Sep 2019 – Apr 2024**
Bachelor of Science, Software Engineering   *Calgary, Alberta*

Dean's Honours List 2019-2022 — **CGPA: 3.8/4.0**

Relevant Coursework: Data Structures and Algorithms, Database Management Systems, Software Performance Evaluation, Web-based design, Distributed Systems, Big Data Analysis, and Linear Algebra

Work Experience

Pason Systems   **May 2022 – Sep 2023**
Data Science Intern   *Calgary, Alberta*

- Managed the development and maintenance of high-scale data analysis software, serving over 2000 weekly users and providing critical functionality for daily business operations
- Spearheaded the creation and deployment of section detection algorithms for industrial process sensors, improving data processing speed by 17% and accuracy by 15%
- Implemented K-means clustering algorithms to analyze patterns in drilling surfaces
- Enhanced performance analysis by 20% and boosted critical event detection by 22% through sensor data analytics
- Actively collaborated with product managers, designers, and sales representatives to gather requirements and generate client reports, ensuring daily project alignment and effective communication

University of Calgary   **Jun 2021 – Aug 2021**
Software Engineer Research Intern   *Remote*

- Researched video data analytics for human biometrics, focusing on advanced action detection and accurate breathing rate estimation
- Led the development of user-friendly interfaces for agent-based modeling, enhancing accessibility for interdisciplinary teams

Projects

RouterSimulation   **C++ | Qt**

- ∗ Engineered a C++ router queue simulation leveraging Qt for GUI development, enabling dynamic adjustments of bufferSize and wlanCapacity to model network behaviors
- ∗ Analyzed over 712,841 packets, reporting minimal average queuing delay (0.004s), demonstrating the simulation's effectiveness in network performance optimization
- ∗ Conducted rigorous cross-platform testing, utilizing custom network packet traces, achieving zero packet loss, validating the simulation's accuracy and reliability

Traffic Crash Prediction   **PySpark | ML Libs | API**

- ∗ Led a Traffic Crash Prediction project using the Databricks platform, handling data extraction, cleaning, and analysis on datasets comprising over 700,000 records retrieved through its API
- ∗ Developed a predictive random forest model using PySpark, securing high validation scores in forecasting accident variables
- ∗ Implemented Matplotlib and Seaborn for advanced data visualizations, significantly boosting data-driven decision-making with concise and actionable insights

TrapEase   **AWS | Python**

- ∗ Strengthened cybersecurity with decoy portals, attracting and identifying threats and compromised credentials
- ∗ Adopted agile methodologies to expedite the development of functional software for continuous improvement

Technical Skills

Languages: Python, C, C++, SQL, HTML5, CSS, JavaScript, Java
Developer Tools: AWS, Postman, Docker, PowerBI, Git, JIRA, Grafana k6, RAC
Libraries/Frameworks: Spark, JSON, Scikit-learn, Seaborn, Pandas, Tensorflow