Md Samshad Rahman

Phone: +1 782 882 7711
Email: samshad@dal.ca
GitHub: https://github.com/samshad
LinkedIn: https://www.linkedin.com/in/samshadrahman/

Technical Skills:

Python, SQL, Machine Learning, Fine-Tuning Large Language Model (LLM), NLTK, spaCy, Scikit-learn, Regression Analysis, Google Cloud NLP, IBM Watson, FastAPI, Django, Flask, Celery, SQLAlchemy, REST API, PostgreSQL, MongoDB, DynamoDB, React.js, Tailwind CSS, AWS Lambda, AWS EC2, API Gateway, CloudWatch, CloudFormation, Git, Docker, Web Scraping, BeautifulSoup, Selenium, Tableau, Looker Studio

Selected Academic Experience:

Dalhousie University, Halifax, Nova Scotia

AI-Powered Mindful Eating App (Persuasive Computing Lab) [January 2025 – April 2025]
- Spearheaded the end-to-end development of a personalized mindful eating mobile application (React Native, Expo) and backend (FastAPI, Python, PostgreSQL, Ollama, UnsloathAI) to deliver AI-driven dietary suggestions.
- Fine-tuned two Meta Llama 3.2 (3B) models using LoRA adapters via Unsloth on Google Colab (T4 GPUs):
  - Predicting Big Five personality traits from user questionnaire data.
  - Developed a second LLM to generate context-aware eating tips, achieving ~88% user-rated relevance across pilot tests.
- Authored and curated a novel dataset of 1500 domain-expert-inspired mindful eating tips, mapped across 10 eating behaviors and 5 personality traits, refined with ChatGPT-4 and validated by a dietitian and psychologist.
- Developed a robust FastAPI backend with RESTful APIs for user authentication, profile management (demographics, dietary preferences, personality traits), goal setting, food logging (image & text), and real-time LLM interaction.
- Implemented a full-stack solution featuring a user-friendly React Native mobile interface, enabling seamless data input, personalized feedback delivery, and direct chat support via the fine-tuned LLM.
- Built a Big Five personality classifier trained on 2,467 essays using Symanto NLP API..

Awarded Public Tenders Analysis Dashboard (Visual Analytics) [September 2024 – December 2024]
- Increased data exploration efficiency by ~40% and enabled effective procurement trend identification by developing an interactive Python Dash dashboard for public tender analysis.
- Improved identification of trends in tender descriptions by ~30% using BERTopic, generating actionable insights into procurement trends and supplier performance.
- Reduced dataset noise by ~35% through processing and cleaning, improving the accuracy of trend analysis for informed decision-making.
- Increased data clarity and accessibility by ~25% and boosted user engagement by designing visually compelling Plotly graphs and charts.

Serverless Sentiment Analysis for Hotel Customer Feedback [June 2024 – August 2024]
- Developed a serverless feedback system using AWS Lambda, DynamoDB, & Google Cloud under strict academic deadlines, demonstrating rapid learning and adaptability.
- Achieved ~30% improvement in processing efficiency for feedback management via real-time CRUD operations built on AWS Lambda and DynamoDB.
- Delivered highly accurate (~98%) real-time feedback sentiment analysis (positive/neutral/negative) using Google Cloud Natural Language API, significantly improving user understanding.
- Deployed a cost-effective (~30% reduction) and efficient (~50% less management time) scalable serverless architecture, partnering with the frontend team for React.js and AWS API Gateway integration.

Related Professional Experiences:

Jr. Python Developer at Smartbytes Ltd. Bangladesh [February 2022 – September 2022]

Resume Matching with Job Descriptions
- Expanded training dataset by ~40% via web scraping and enrichment, significantly improving model performance for job classification.
- Leveraged NLTK and spaCy for Named Entity Recognition (NER) to extract key attributes (skills, education, location), improving data quality by ~30% and enhancing model accuracy.
- Utilized TF-IDF vectorization for text-to-vector conversion, further optimizing the model training pipeline.
- Successfully linked resumes to multiple job categories using a LinearSVC model with multi-class classification.
- Provided clear API documentation and process guidelines to the frontend team, ensuring efficient collaboration.

Research Assistant, Cognitive & Behavioral Data Science Lab, UI University, Bangladesh   [October 2021 – March 2022]

Eating Preference Analysis Based on Human Personality Traits
- Developed and implemented a rotating proxy system for web scraping, overcoming data collection challenges (dynamic loading, rate limits, IP blocking) and improving efficiency.
- Ensured unique URL storage and reduced data redundancy for restaurant check-ins using Set data structures.
- Improved data retrieval to $O(1)$ complexity by implementing caching of scraped data using Map/Dictionary structures.
- Enhanced personality profiling accuracy by cleaning Twitter data with NLP tools (spaCy, NLTK), reducing irrelevant content by ~45%.
- Increased predictive accuracy of dining preferences by ~30% by analyzing correlations between Big5 traits (via IBM Watson API) and restaurant choices.
- Ensured research alignment and methodological refinement via consistent supervisor feedback and close collaboration.

Additional Experience:

Appliances and Home Solutions Advisor, Best Buy Canada Ltd. Halifax, NS   [October 2023 – Present]
- Contributed over ~29% of total departmental revenue in the last fiscal year while working part-time.
- Achieved ~35% higher revenue per hour than the departmental average, positioning as the top performer in sales efficiency across the whole store.
- Led the department in Best Buy Protection Plan (BBP) attachment rates, significantly surpassing targets.
- Achieved a leading ~8.10% Multi-Channel Fulfillment (MCF) rate, maximizing sales retention for out-of-stock items through direct-to-customer order processing.
- Drove customer loyalty and recurring revenue with a Best Buy Membership (BBM) attachment rate placing in the top percentile of the team.
- Provided expert consultation to customers on appliances, home solutions, and smart living products, identifying needs to deliver optimal solutions within budget.
- Managed full sales cycle including customer engagement, product demonstration, closing sales (including processing MCF orders), processing returns, and handling online order setups and pickups.
- Contributed to store operations through inventory management (downstacking, lookups, plano integrity), merchandising, and maintaining departmental cleanliness and organization.
- Proactively trained and mentored new employees on products, sales techniques, and store processes.
- Took initiative in managing departmental tasks, coordinating with coworkers, and conducting customer callbacks to enhance service and secure sales opportunities.
- Maintained in-depth product knowledge across diverse categories through continuous learning and engagement with training modules.

Key Skills Demonstrated:
- Consultative Sales & Customer Relationship Management
- Effective Communication & Active Listening
- Problem-Solving & Solution-Oriented Thinking
- Initiative & Proactive Task Management
- Team Collaboration & Mentorship
- Inventory & Operations Management
- Time Management & Prioritization (especially balancing part-time work with studies)

Education:
- **Master of Applied Computer Science**   [September 2023 – May 2025]
  Dalhousie University, Halifax, NS
- **Master's in Applied Statistics and Data Science**   [November 2019 – April 2022]
  Jahangirnagar University, Bangladesh
- **BSc. in Computer Science and Software Engineering**   [January 2015 – January 2020]
  American International University-Bangladesh