Md Samshad Rahman (MACS | M.Sc. Stats | B.Sc. CS)

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Professional summary:

Solutions Engineer (MACS | M.Sc. Stats) leveraging a dual-discipline background in Applied AI and Backend Architecture to bridge the gap between data science (LLM fine-tuning, NLP) and robust software engineering (AWS Serverless, Python). Proven track record of architecting scalable, cost-efficient systems, achieving ~40% infrastructure cost reductions and sub-5-minute deployment times. Combines technical rigor with exceptional interpersonal skills, utilizing extensive consultative sales experience to excel in stakeholder communication, client needs assessment, and user-focused problem solving.

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

Technical Projects & Engineering:

Dalhousie University, Halifax, Nova Scotia

AI-Powered Mindful Eating App (Persuasive Computing Lab) [January 2025 – April 2025]
- Fine-tuned two Meta Llama 3.2 (3B) models using LoRA and Unsloth to deliver personalized eating advice. Optimized the models to predict personality traits and generate context-aware tips, achieving ~88% relevance in user pilot tests.
- Curated a custom dataset of 1,500 mindful eating tips mapped to specific behaviors and personality types. Worked directly with a dietitian and psychologist to validate the content, ensuring the AI provided safe and accurate guidance.
- Built the complete system from scratch, connecting a user-friendly React Native mobile app to a high-performance FastAPI backend. Implemented real-time AI inference, secure authentication, and multi-modal food logging (text & image).
- Integrated the Symanto NLP API to analyze user textual data, training a secondary classifier to further personalize the AI's interactions based on psychographic data (Big-5 Personality Traits).

Awarded Public Tenders Analysis Dashboard (Visual Analytics) [September 2024 – December 2024]
- Built a dynamic intelligence dashboard using Dash and Plotly to visualize 10 years of Nova Scotia public tender data. Replaced manual spreadsheet workflows, increasing data exploration efficiency by ~40%.
- Implemented BERTopic to automatically extract strategic themes from unstructured tender descriptions. This allowed analysts to identify shifting procurement priorities instantly, improving trend identification speed by ~30%.
- Engineered robust ETL pipelines to ingest, clean, and normalize messy government datasets, reducing data noise by ~35%. Containerized the application using Docker and deployed it on AWS EC2 for reliable access.
- Enhanced data clarity and accessibility by ~25%, boosting user engagement through visually compelling Plotly graphs.

Serverless Sentiment Analysis for Hotel Customer Feedback [June 2024 – August 2024]
- Architected a fully serverless backend using AWS Lambda and DynamoDB Streams to process guest feedback in real-time. This event-driven design improved data processing speed by ~30% compared to previous containerized prototypes.
- Integrated Google Cloud Natural Language API to instantly classify sentiment (Positive/Neutral/Negative) with ~98% accuracy, transforming raw text into actionable insights for management.
- Leveraged a pay-per-use serverless model to reduce infrastructure costs and management overhead by ~50%. Partnered with the frontend team to securely expose these insights via AWS API Gateway to a React.js dashboard.

Related Professional Experiences:

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

Resume Matching with Job Descriptions
- Engineered a robust data pipeline to scrape and process 15,000+ resumes/job ads, expanding the training dataset by ~40%. Implemented Named Entity Recognition (NER) using spaCy to extract critical attributes (skills, education) for precise matching.
- Benchmarked multiple algorithms, ultimately deploying a LinearSVC model that outperformed baselines (Random Forest) by 40%. Achieved 92% top-5 match accuracy, directly automating the manual screening process for recruiters.
- Utilized TF-IDF vectorization for text-to-vector conversion, further optimizing the model training pipeline.
- Architected the solution as a containerized FastAPI microservice, ensuring real-time performance. Deployed on AWS ECS with auto-scaling and generated automated Swagger documentation to streamline collaboration with the frontend team.

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

Eating Preference Analysis Based on Human Personality Traits
- Engineered a robust web scraping infrastructure using rotating proxies to overcome strict rate limits while strictly adhering to robots.txt protocols to ensure ethical and compliant data collection from platforms like Twitter and Foursquare.
- Optimized data processing workflows by implementing Hash Maps (O(1) retrieval) and Set data structures to eliminate redundancy and enforce data uniqueness at scale.
- Integrated IBM Watson API and spaCy to extract Big Five personality traits from unstructured text. Reduced dataset noise by ~45% and improved the predictive accuracy of dining preference models by ~30%.

Software Engineer, Free Pixel Games Limited, Bangladesh   [November 2020 – May 2021]

Unified Ad-Service Revenue Dashboard
- Engineered robust headless scrapers (Selenium/BeautifulSoup) and API integrations to ingest daily performance data from multiple ad networks (AdMob, AppLovin). Standardized disparate CSV formats into a normalized MySQL warehouse, handling ~50,000 new records monthly with zero downtime.
- Automated the manual revenue reporting process, reducing daily workload by >80% (cutting 2 hours of work to 15 mins). The centralized insights enabled ad spend optimization, driving an ~8% increase in blended fill-rates.
- Built a dynamic Tableau dashboard for cross-network visualization and developed a Python-based rule engine to trigger automatic alerts for critical anomalies (e.g., drops exceeding 10%), ensuring proactive revenue protection.

Additional Experience:

Microsoft Senior Advisor, Best Buy Canada Ltd. Halifax, NS   [October 2023 – Present]

- Conduct diagnostic consultations to translate customer requirements into optimal IoT, Smart Home, and Computing solutions, ensuring technical compatibility and budget alignment.
- Consistently rank as the store-wide top performer in efficiency, contributing ~29% of total departmental revenue and achieving ~35% higher revenue-per-hour than the average through targeted, solution-oriented selling.
- Maintain a leading 8.1% Multi-Channel Fulfillment (MCF) rate, maximizing revenue retention for out-of-stock inventory through efficient direct-to-customer logistics processing.
- Drive recurring revenue and long-term loyalty by leading the department in attachment rates for Value-Added Services (Protection Plans) and Membership Subscriptions, consistently placing in the top percentile.
- Proactively mentor new associates on technical product specifications and sales methodologies while optimizing departmental inventory workflows (merchandising, plano integrity).

Core competencies:

Technical Skills:
Python, SQL, LLM Fine-Tuning (Llama 3, LoRA), Machine Learning, NLP (spaCy, NLTK, BERTopic), Scikit-learn, Google Cloud NLP, IBM Watson, FastAPI, Django, Flask, REST APIs, PostgreSQL, DynamoDB, MongoDB, SQLAlchemy, AWS (Lambda, EC2, API Gateway, CloudFormation, CloudWatch), Docker, Git, React.js, Tailwind CSS, Web Scraping (Selenium, BeautifulSoup), Tableau, Looker Studio.

Interpersonal Skills:
Technical Communication, Client Needs Analysis, Active Listening, Stakeholder Management, Customer Relationship Management (CRM), Mentorship & Training, Strategic Decision Making, Root Cause Analysis, Time Management & Prioritization.