

# ABU AWAL MD SHOEB

Senior ML Scientist — Python • Applied ML/NLP • Low Latency & Production ML/Agentic Systems

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github.com/abushoeb

Google Scholar

## EXPERIENCE

- ML Scientist with 10+ years building production-grade ML systems, specializing in NLP and LLMs. Expert in Python (NumPy, pandas, PyTorch, scikit-learn), transformers (BERT/LLMs), prompting, zero-shot and fine-tuning, and RAG pipelines.
- Led the end-to-end model lifecycle—from experimental design and rigorous offline eval/backtesting to scalable training, low-latency inference with TorchServe, and monitoring using AWS (SageMaker, CloudWatch, Bedrock).
- Build reliable, scalable systems and care about evaluation rigor, reproducibility, and shipping research to production.
- Proficient in large/dirty data, feature engineering, and distributed computing (Spark). Ph.D. in Computer Science; focused on turning noisy text and alternative data into robust, reproducible signals.

### Senior Machine Learning Scientist

#### Solventum (Formerly 3M Health Care Division)

April 2021 - Present

Remote, New Jersey

- Provided strong technical leadership by standardizing the ML model training infrastructure in SageMaker. This enabled scalability, eliminated hours of manual processes, and enforced consistent model training practices across teams.
- Architected and implemented an end-to-end agentic system (Medical Chart Abstraction) on AWS Bedrock, orchestrating multi-step LLM pipelines to extract structured data elements from heterogeneous unstructured patient documents
- Tech Stack: Python, PyTorch, TorchServe, SageMaker, Docker, GitHub Actions, Kibana, AWS Bedrock Gen AI, LiteLLM, Langfuse

### Summer Research Intern

#### Nokia Bell Labs

Summer 2018 & 2017

Murry Hill, New Jersey

- Analyzed data containing users' requirements and job descriptions to allocate optimal resources from a shared GPU cluster
- Developed a module for Bell Labs internal Deep Learning Training System to reduce the overall training time of jobs and released it under a heterogeneous cluster using Kubernetes
- Technologies: Python, Kubernetes, Ansible, Grafana, Docker

### Software Engineer Intern

#### MedSnap LLC

Summer 2015 & 2014

Birmingham, Alabama

- Researched drug-related data and images and developed a visualization tool to help to identify counterfeit medication
- Technologies: Vagrant, PHP, Amazon EC2, d3, JavaScript, MSSQL

### Founder & CEO

#### Criss Cross Computers

2011 - 2020

Sylhet, Bangladesh

- Developed and implemented the first online service for students at SUST to make payments and withdraw transcripts

## EDUCATION

Ph.D. in Computer Science (NLP & ML)

#### Rutgers University

Spring 2021

New Brunswick, NJ

- Thesis Title: Computational Methods to Understand the Association between Emojis and Emotions [PDF]

## RECENT PUBLICATIONS

### Selected Papers (2900+ Citations)

- Beyond the Imitation Game: Quantifying and extrapolating the capabilities of language models, Transactions on Machine Learning Research (TMLR), 2023 [Paper] [Github]
- Assessing Emoji Use in Modern Text Processing Tools 🗣️, ACL 2021 [Paper] [Github]
- EmoTag1200 👍 : Understanding the Association between Emojis 😊 and Emotions 🥰, EMNLP 2020 [Paper] [Video] [Github]

## ACTIVITIES

The Unicorn Award Winner - 2025

Health Spark GenAI Hackathon by Solventum

Interview Committee Member - 2025

Solventum Recruiting

Mentor of the MentorLink Program

Mentorship program at Solventum

Graduate Mentor, Rutgers University

Douglass DIMACS Computing Corps (DDCC)

PC Member and Reviewer:

ACL, EMNLP, CoNLL, SocialNLP, Computational Intelligence

IBE Certification

Institute for Biomedical Entrepreneurship

2019

Boston, MA

President

Rutgers Graduate Student Association (GSA)

2016-17

New Brunswick, NJ

Emerging Young Talents

Prothom Alo - major daily newspaper

April 2010

Bangladesh

- For coordinating and developing first mobile SMS based registration system for undergraduate admission in Bangladesh