Sabin Hashmi

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PhD Researcher developing computational models for large-scale systems. Specialized in neural networks, LSTM models, and time-series forecasting for high-energy physics applications. Expert in real-time data processing, algorithm optimization, and end-to-end ML pipeline development. Experienced with MLOps, containerization, and cloud technologies.

SKILLS

- **Programming Languages:** Python, C++, Dart, SQL
- **Frameworks and Libraries:** PyTorch, TensorFlow, Scikit-learn, XGBoost, CatBoost, Flutter, ROOT
- **Cloud and DevOps:** AWS, Docker, OCI
- **Computational Tools:** Git, Tableau, Latex, Linux/Unix, Jupyter
- **Core Expertise:** Predictive Modeling, Pattern Recognition, Anomaly Detection, Risk Analytics, Statistical Modeling, Large-Scale Data Analysis, Explainable AI, Time Series Analysis, Computer Vision, NLP

WORK EXPERIENCE

CERN **Genéve**
Project Associate **Oct 2020 - Present**

- Conducted research as part of the Ph.D. program at LHCb Experiment.
- Designed and implemented intelligent computational algorithms for rare event detection and hardware calibrations.
- Developed and deployed machine learning models with software trigger systems.

HSBC **Kraków**
Compliance Analyst **Nov 2022 - Aug 2023**

- Built and analyzed metric models for financial crime and risk detection.
- Conducted metric evaluations for financial tools and products, leveraging synthetic data for testing and validation.

KopKopi **Gdańsk**
Junior Data Scientist **Mar 2021 - May 2021**

- Conducted market research and developed business optimization strategies using data analytics.
- Performed detailed analysis of market trends, customer segmentation, and sales performance.

EDUCATION

Ph.D in High Energy Particle Physics
AGH - University of Science and Technology Kraków • Oct 2020 - Present

Research Focus: Design, develop, and deploy machine learning-based trigger algorithms for rare event selection in high-energy physics experiment.

Post Graduate Diploma in Data Science and Engineering

Great Lakes Institute of Management — Bangalore • Aug 2019 - Feb 2020

Project: Developed a customer profiling model to optimize loan approval systems, leveraging machine learning for risk assessment and customer segmentation.

Integrated Masters in Physics

Central University of Tamil Nadu — Thiruvarur • Aug 2013 - Jul 2018

Thesis: Finite Element Method (FEM) in Microwave Diathermy for medical applications.

PROJECTS

Upstream Tracker Calibration using LSTM — Jan 2024 - Present

AGH - University of Science and Technology

- Developed end-to-end ML pipeline using Long Short-Term Memory networks for real-time monitoring and hardware calibration.

Building Advanced Computational Models for High-Level Trigger Systems — Oct 2020 - Present

LHCb Experiment, CERN

- Developed and deployed machine learning models for rare event selection within the LHCb Experiment's real-time trigger system.
- Integrated the models into the track reconstruction process, enabling real-time event detection and analysis.
- Publication-Link

Dried Droplet Pattern Recognition using Artificial Neural Networks. — Oct 2020 - Feb 2021

Central University of Tamil Nadu

- Applied deep learning algorithms to identify and classify patterns in dried droplet experiments, advancing recognition techniques for scientific imaging.
- Publication-Link