ROBEN BHATTI

M.Sc Physics of Data Student

in/roben-bhatti
robenbhatti@gmail.com
Padua, Italy
github.com/bhroben
+39 331 211 6804
Italian Citizenship

SUMMARY

25-year-old M.Sc. Physics of Data student with a strong background in Physics, Mathematics, and Statistics. Proficient in Python, R, SQL, and various technologies, including Kafka and PySpark. Passionate about Data Science and Physics, with a keen interest in exploring innovative solutions for challenging problems.

SKILLS

Languages: Python, R, SQL, Shell.

Technologies: Docker, Git, CI/CD, Anaconda, Kafka, Spark, Keras, Pytorch, SciPy, NumPy, Pandas, Scikit-learn, XGBoost.

EXPERIENCE

10/2024 – now **Data Scientist Intern** — **German Aerospace Center (DLR) in Bremen (DE)**

- Developed a Bayesian Framework for uncertainty estimation of Aerodynamic Coefficients.
- Set up CI/CD pipeline, Unit Tests, Linting, and modular package structure following PEP8.
- Applied sparse methods for efficient Bayesian computation.
- Followed Scrum Workflow for structured and iterative development.

EDUCATION

10/2022 - 07/2025 **Master Degree in Physics of Data** — **University of Padua**
Master degree program that merges and innovates the educational offers from Physics and Data Science.

10/2019 - 10/2022 **Bachelor Degree in Astronomy** — **University of Padua**
Bachelor program provides solid foundation in physics, mathematics, and statistics.

PROJECTS

End-to-End ML Pipeline for Profiling Insurance Customers — **PostgreSQL, Python, CI/CD, Docker**
Built a medallion-architecture Data Lakehouse in PostgreSQL and predicted insurance claim amounts per customer using Random Forest model.

Streaming processing of cosmic rays using drift tubes detectors — **Kafka, PySpark, SQL, Docker**
Designed and implemented a real-time ETL pipeline to process data from a particle physics detector, publishing analytics to a live dashboard for continuous monitoring.

Bayesian optimization with Gaussian Processes — **Python, TensorFlow**
Implemented Gaussian Process models for hyperparameter optimization of convolutional neural networks (CNNs). Explored both MCMC and maximum likelihood approaches for tuning advanced kernel parameters.

DETR for recognition of real chess game — **Pytorch**
Developed and fine-tuned a Transformer-based model to accurately identify chess pieces and their positions on real chessboards. Automated the conversion of board states into standard FEN notation for further analysis.

Feature importance methods of simulated binary black holes — **Python, Machine Learning**
Analyzed key features influencing the evolution of binary systems into Binary Black Holes using advanced machine learning techniques. Presented findings to highlight the most impactful variables in the process.

Naive Bayes multinomial classifier for fake news detection — **R**
Accurate and automated identification of fake news sentences using Bayes Theorem.

LANGUAGES

English - C1, **Italian** - native

EXTRA

11/2023 **NOI Hackaton SFSCON Edition** — **Bolzano**
Developed an AI prototype during a 24-hour hackathon, leveraging computer vision to detect parking abuse, assist customers, and generate big data insights. Collaborated under tight deadlines, set clear goals, and delivered solutions effectively.

3/2022 – 6/2023 **Study Room surveillance** **University of Padua**

Provided assistance, resolved issues, and ensured a conducive environment.