UMAR MUSHTAQ

CONTACT

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EDUCATION

Åbo Akademi Universtiy , Vaasa
Masters in Computer Engineering
2023-2025

Universtiy of Engineering and Technology Taxila (Pak)
Bachelors in Computer Science
2016-2020

SKILLS

- Python Programming 98%
- Data Analysis 94%
- Machine Learning 92%
- Data Visualization 93%
- SQL Database 92%
- Deep Learning 88%
- API Development 84%

ABOUT ME

Research-oriented computer engineer with expertise in machine learning, data analysis, and optimization. I excel in developing algorithms, conducting systematic research, and applying statistical methods to real-world challenges. With a strong foundation in programming and mathematical modeling, I am always eager to explore new research directions and contribute to innovative projects, while continuously advancing my analytical and academic skills.

RESEARCH EXPERIENCE

Project Assistant – Åbo Akademi University DEC 2024 - JUN 2025

- Classify and analyze research on testing methods for vessel commissioning
- Explore testing phases, tools, programming languages, and weak points of existing approaches
- Analytical skills, knowledge of testing and simulations, Python/Excel for data processing
- Results can be submitted for publication in a conference

Research Collaborator – Åbo Akademi University JULY 2025 - CONT

- Working with Professor Dragos Truscan on an extended journal publication building on Master's thesis research.
- Expanding analysis and refining results for submission to an international journal.
- Continuing to develop strong skills in academic writing, critical evaluation, and collaborative research.

EXPERIENCE

Data Engineer – Remote JUN2025 - CONT

- Collected and processed large-scale property datasets for predictive modeling.
- Built automated pipelines to scrape and preprocess dynamic data streams.
- Applied ML methods for cleaning, pattern detection, and feature extraction.
- Integrated ML-enriched data into the front-end for visualization and decision support.

PUBLICATIONS

Vessel Commissioning Testing: A Mapping Study

- Conducted a systematic mapping study on vessel commissioning.
- Analyzed testing techniques, phases, tools, modeling approaches, and programming languages used in the maritime domain.
- Identified trends, limitations, and opportunities for improving commissioning practices.
- Provides insights valuable to researchers, shipbuilders, and maritime engineers.
- Status: Preprint submitted to Elsevier (2025).

Adaptive AI Benchmarks for Databases

- Developed an AI-driven benchmarking framework for self-managing databases.
- Generates adaptive workloads in real time, unlike static benchmarks.
- Adjusts queries and load patterns dynamically to reflect changing conditions.
- Early results show ability to reveal tuning gaps and provide deeper optimization insights.
- Status: Ongoing work (2025).

RESEARCH SKILLS

- Research Methodology
- Academic Writing
- Literature Review
- Problem Solving
- Critical Thinking
- Team Collaboration
- Project Management

REFERENCES

Dragos Truscan

Professor in Computer Science at
Abo Akademi University

dragos.truscan@abo.fi

+358 407682644

LANGUAGES

- English (Fluent)
- Finnish (Basic)
- Urdu (Fluent)

RESEARCH INTEREST

Machine Learning & AI

- Statistical modeling for complex, large-scale data.
- Scalable optimization and machine learning algorithms.
- Multimodal data fusion for robust AI systems.
- Generative and agent-based AI for automation and decision-making.
- Integration methods for intelligent software engineering.

PROJECTS

Recipe Scraper and Data Analysis - Python Developer SEPT 2024

- Automated scraping of 50 recipe pages, collecting 1,050 entries with nutritional data.
- Designed visualizations for users to compare recipes based on dietary preferences.

Step Detection Algorithm Comparison DEC2024

- Evaluates static vs dynamic threshold methods for accurate step detection.
- Visualizes and compares results across walking, slow walking, and sprinting activities.

Pixel Secrets – Front-End Developer MAR 2024

Award Winner, ICT Showroom Turku

- Developed responsive UIs and ensured a smooth user experience.
- Collaborated with a cross-functional team, leading to an award for innovation.

Student Grade Prediction – Python Developer OCT 2024

- Created a machine learning model in Python to predict student grades based on activity logs.
- Analyzed student behavior correlations with academic outcomes, presenting key findings through visualizations.

Personal Portfolio Website – Full Stack Developer AUG 2023

- Developed a personal portfolio using React.js with a clean, responsive design.
- Focused on SEO optimization and functionality to showcase projects effectively.

ACHIEVEMENTS

Runner-up – Nokia Telia Hackathon

- Secured second place in a live network hackathon, leveraging the Network as Code platform to deliver impactful solutions at Espoo Finland

Participant – 5th Vaasa International Talent Program

- Engaged in a professional development program connecting international talents with local companies in Vaasa, Finland.

Certificate of Participation – Robotics Hackathon at SAMK

- Participated in a 2-day Robotics Hackathon, collaborating on innovative solutions at the SAMK Campus, Pori, Finland.

Volunteer – Vaasa Energy Week 2025

- Assisted in event coordination and participant support at one of the largest Nordic gatherings for the energy industry.

Volunteer – Junction X Vaasa 2025

- Supported event organization and coordination, contributing to Finland's largest hackathon while engaging with participants and teams