

AVASHESH KUMAR

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Helsinki

EDUCATION

Aalto University, Espoo, Finland

Master of Science (Technology), Mathematics and Operations Research
Thesis: Optimising the Hybrid Energy System: A mathematical modelling approach considering uncertainties

Sep 2021 - Jan 2024

GPA: 3.94 / 5.0

Loughborough University, Loughborough, United Kingdom

Bachelor of Science (Honours), Mathematics
Thesis: Exploring the Riemann zeta function and its applications

Sep 2018 - Jul 2021

Degree Mark: 84%

PROFESSIONAL EXPERIENCE

Innovation Analyst Trainee

Apr 2024 - Sep 2024

Fortum, Espoo

- Validated advanced AI solutions through demo use cases with small datasets.
- Developed chatbot demos using Llama 3 models, showcasing real-world applications.
- Used machine learning tools to optimize chatbot performance, increasing response relevance by 15%
- Delivered AI/ML ideation workshops to over 20 innovators, fostering team creativity.
- Learnt UI/UX design using Figma to create website prototypes.
- Developed my basic skills in Full-stack development (Python, Flask, HTML, CSS, JavaScript) within a week to deliver on a project with a tight deadline.

Key Achievements:

- Led the development of the first prototype for a product in Phase 2 of ideation.
- Enabled customer interaction and validation of the product's potential, securing additional funding for project advancement.

Data Scientist Intern

Jun 2023 - Aug 2023

Vaisala, Espoo

- Developed data pipelines to transform API data into structured formats and automated the ETL process, improving data accuracy for analytics, resulting in a 50% reduction in processing time.
- Integrated advanced technologies like OpenAI's GPT-3.5, AWS SageMaker, and ChromaDB into evaluation frameworks.
- Explored and evaluated language model architectures using SageMaker, refining skills in model selection and tuning.
- Deepened knowledge of NLP metrics including Recall, Precision, F1 Score, and Mean Reciprocal Rank (MRR).
- Collaborated with a multidisciplinary team, emphasizing the importance of teamwork and effective communication.

Key Achievements:

- Assisted in early-stage research of evaluation strategies for foundation models in chatbot development.
- Contributed to the team's decision to adopt the Retrieval-Augmented Generation (RAG) approach, shaping the project's direction.

ADDITIONAL RELEVANT EXPERIENCE

Machine Learning Developer

Sep 2021 - May 2022

Aalto Product Development Project with SAAB, Espoo

- Developed a cost-effective drone detection system as an alternative to expensive solutions.
- Self-taught Python and machine learning principles to implement a basic YOLOv3 object detection algorithm for real-time detection via webcam.
- Collaborated with a multidisciplinary team to achieve project goals without prior experience in necessary tools.
- Tackled technical challenges creatively, delivering a functional prototype that met project objectives.

Key Achievements:

- Delivered a low-cost solution for drone detection that led to **over 99% cost savings** when compared to high end solutions.

CERTIFICATIONS

- | | |
|---|---|
| • <i>Microsoft Azure for Data Engineering</i> | • <i>Python for Machine Learning & Data Science</i> |
| • <i>Advanced MySQL</i> | • <i>Data Science with BigQuery</i> |
| • <i>Microsoft Power BI for Business Intelligence</i> | • <i>Gen AI Foundational Models for NLP</i> |
| • <i>Deep Neural Networks with PyTorch</i> | • <i>Generative AI with Large Language Models</i> |

PROJECTS

- | | |
|--|---|
| • Predicting stock performance with linear models using Python | • Financial Analysis for Business Optimization |
| • Analyzing Labor Cost in Human Resources SQL Database | • Full Stack Development of a Facility Booking system with User Authentication |
| • Deep Learning Image Recognition Project | • Chatbot implementation using Retrieval-Augmented Generation (RAG) with Langchain. |

SKILLS

- **Programming Languages:** Python (Advanced), SQL (Advanced), JavaScript
- **Frameworks and Libraries:** PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy
- **Database and API Development:** AWS DynamoDB, Azure CosmosDB, SQL, MongoDB, RESTful APIs, PostgreSQL, MySQL, Git for version control and collaboration
- **Machine Learning and AI:** LLMs, LangChain, Computer Vision, Deep Learning, Data Labelling
- **Cloud Platforms:** Azure, AWS, Google Cloud Platform (BigQuery)
- **Language Skills:** English (Native), Finnish (A1.2) (actively improving through courses and daily practice) , Hindi (Native)

EXTRACURRICULAR ACTIVITIES

International Men's Cricket Player, Finland

Apr 2023 - Present

- Played in several international matches with teams such as Italy, Austria, Denmark.

Vice Chair, Board of Aalto Tennis

Oct 2022 - Present

- Developed innovative strategies to generate additional revenue, helping to provide financial aid to support tennis courses and programs.

President, School of Mathematics, Loughborough University

Jun 2020 - Jun 2021

- **Crisis Leadership:** Acted as the primary student representative during the COVID-19 pandemic, pioneering new communication strategies and problem-solving approaches to address the unique issues arising from the transition to remote learning and student support.