

FELIX VAN DIJK

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EDUCATION

University of Bristol - Bachelors of Science, Computer Science, Expected Graduate 2026

2023

Relevant Modules : Maths A (Discrete Mathematics & Probability Theory), Maths B (Linear Algebra, Analysis & Statistics),
Imperative and Functional Programming, Computer Architecture,
Object-Oriented Programming & Algorithms, Software Tools

A-Levels - Further Maths (A*), Maths (A*), Computer Science (A), Physics (B)

TECHNICAL SKILLS

Front End | React, Next.js, Javascript, TypeScript, HTML5, CSS, styled-components

Back End | Golang, Java, C, C++, PostgreSQL, SQL, Spring, Node.js, MongoDB, Haskell, Python

Testing/Deployment | JUnit, Maven

Developer Tools | Git, GitHub

Data Analysis/Statistical Tools | R, Pandas

WORK EXPERIENCE

Software Engineer & Data Analyst | AHV International | Remote/Ireland

Aug 2024-Present

Improved efficiency by over 720% via automation

Python | Flask | SQL | JavaScript | Data Visualization | API Integration | Pandas

- Automated report generation pipeline, reducing report creation time from **5 days** to under **10 minutes**.
- Created a feature for dynamic data processing, extracting metrics (fertility, milk cell count) from over **4** years of historical data.
- Developed API-driven data analysis, generating automated insights using a fine-tuned LLM for consistent reporting.
- Deployed regular, branded PDF reports with custom formatting for over **700** farms, ensuring compliance with company standards.
- Deployed the solution via Render, supporting up to **10+** simultaneous users.

PROJECTS

Full-Stack Engineer | Online veterinary consultancy (In Progress)

May 2024-Present

Currently developing an online veterinary consultancy

JavaScript | React | TypeScript | Node.js | SQL | Machine Learning | Cybersecurity

- Developing a full-stack online veterinary consultancy platform, utilizing React and TypeScript for a dynamic and responsive front-end, and Node.js for a scalable and efficient back-end.
- Architecting a large-scale PostgreSQL database with secure encryption protocols (e.g., AES-256) for storing sensitive data, including client details and payment information.
- Implementing OAuth 2.0 for secure user authentication and integrating a trusted third-party payment gateway (e.g., Stripe or PayPal) to handle transactions securely.
- Fine-tuned and deployed Llama 3.1 on an NVIDIA nim to provide tailored AI-driven Q&A support, enhancing user experience and client engagement.
- Ensuring high availability and fault tolerance through AWS cloud services, including RDS for database management and Lambda for serverless functions.
- Incorporating CI/CD pipelines with tools like Jenkins or GitHub Actions to automate testing and deployment, improving development efficiency and reducing downtime.

Back-End Engineer, AI and Math Lead | AI | University of Bristol

Jan 2024 - May 2024

An AI designed to make the most efficient moves possible within the game

Java | Artificial Intelligence | Heuristics | JUnit

- Facilitated discussions with my team to delegate responsibilities such as developing rules, calculating heuristic weight etc.
- Engineered AI algorithms for strategic decision-making, improving the character's gameplay effectiveness by **30%** through advanced heuristics carefully weighted to determine the perfect move.
- Utilized Dijkstra's algorithm and the inverse square law to optimize pathfinding between nodes on the board.
- Reduced computational load via the minimax algorithm with Alpha-Beta pruning and allowing the AI to predict **5x** more moves ahead.
- Developed and fine-tuned AI heuristics to analyze game states and anticipate opponent movements, enhancing gameplay strategy.
- Leveraged Maven for build automation and Git for version control, ensuring a stable and bug-free implementation through rigorous testing.
- Achieved a First class, **80%**, grade.

Full-Stack Engineer | GateHouse Vets Digitalised system | The GateHouse Vets, Lavister

May 2022 - June 2023

Reached out to a veterinary branch to convert their paper based system into a fully digitalised version

VB | SQL

- Facilitated discussions with client and staff to understand what they needed and used questionnaires and forms to quantify importance.
- Improved operational efficiency by **40%** by increasing availability of information between branches and negating loss of data.
- Designed and implemented SQL databases with meticulously crafted tables and relationships to store and manage staff, clients, appointments, stock, holidays and animals effectively.
- Developed an intuitive booking system, a secure password-protected login interface with password retrieval via email, a stock tracker to easily see which branches have what stock, and a dynamic calendar synced with appointments to streamline operations.
- Integrated advanced search and sort algorithms for client management and precise cost calculation features for veterinary procedures.
- Created a stock tracking database with online ordering capabilities, reducing stock management time by **20%**.
- Ensured stakeholder alignment through surveys and feedback, so that the final product met all user requirements and expectations.

ADDITIONAL INFORMATION

Sports - Mixed martial arts (First Dan black belt), rugby (House team captain), hockey (NE school team champions 2020)

Interests - Motorcycles, music (Drums), F1, crypto trading (Explored algorithmic trading), bodybuilding

Certificates - Harvard University (CS50 Online), Maths (Maths Challenge award winner), JPMorgan Chase & Co. (SE Lite Certificate), Goldman Sachs (SE Virtual Experience & Certificate)