Hans Heje
Machine Learning Engineer

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Work experience

2022 - Present   IBM • Software Engineer
- *Helped the Danish national football team win tournaments, increasing their FIFA ranking from 16 to 11 by developing a hybrid cloud-based application that leveraged machine learning to create data analysis reports of games in collaboration with external stakeholders.*
- *Helped convince companies to fund shared quantum computing initiative at University of Copenhagen, by demonstrating use cases of quantum algorithms.*
- *Contributed to large scale automatic data processing and analysis in a digital twin project of wind turbines.*

2022 - Present   Novo Nordisk • Data Engineer
- *Ad hoc data engineering & science to visualize pharmaceutical data. Created a machine learning classifier for protein particles.*

2022 - Present   Aalborg University - TypNLP • Research Assistant in NLP
- *Assisted in natural language processing research surrounding low-resource languages.*

2022 - 2022   Aalborg University • Teaching Assistant in OOP
- *Heavy focus was placed on different design patterns and their utility. Supervised their capstone project.*

2021 - 2022   Januar • Cyber Security
- *Implemented S-SDLC. Risk analysis of companies. Reduced attack surface through initiatives & new policies.*
- *Implemented security measures (i.e., EDR, security training).*
- *General security testing (i.e., pen testing). Helped with establishing Cyber security roadmap & convinced management.*

Personal projects

1. Concurrent and scalable system using microservices utilizing machine learning in areas such as time series analysis, risk management, sentiment analysis and portfolio optimization to automate stock investing.

2. Using MongoDB, Express, Bootstrap, Node.js I Co-created a website to help reduce the user's carbon footprint through the usage of APIs, forecasting algorithms (ARIMA), and an account-specific recommendation system.

3. Designed and created a board game programming language & compiler, including the grammar (EBNF), lexer, parser (AST), scope rules and type rules, that code generated to both x86 assembly and C.

4. Using MongoDB, Java, SpringBoot, React.js, collaborated with Blue City to establish requirements and model their problem domain (i.e., UML). Developed an object-oriented solution that reduced repair times.

5. Using C, I created a filtering system helping the user decide which parts of a CV should be included.

6. Combined with digital electronics, I programmed an Arduino in C to create a clock that gave personalized compliments & indicating temperature.

7. Using C# and the Unity game engine, I created an iPhone game to help kids in elementary school learn math in a fun way.

Education

2023 - 2025   Technical University of Denmark • M.Sc. in Computer Science and Engineering
- Studyline*: Algorithms and Artificial Intelligence.*
- Focus Area*: Machine Learning.*

2020 - 2023   Aalborg University • B.Sc. in Software Engineering
- *First in my class.*
- *Study start coordinator for two study lines totalling 85 students.*

Publications

- Lent, H., et al. "CreoleVal: Multilingual Multitask Benchmarks for Creoles." arXiv:2310.19567 [cs.CL], 2023.

Certificates

EPFL Digital Signal Processing • **Stanford** Cryptography • **Chainalysis** Blockchain • **Duke Uni.** Inferential Statistics • **Stanford** Game Theory • **UAB** Digital Systems