Q: Have you studied artificial intelligence?

A: Yes, I have studied artificial intelligence and machine learning extensively at IT-Högskolan from August 2021 to June 2023. During my studies, I covered a wide range of topics including deep learning, computer vision, natural language processing (NLP), and model deployment techniques. I gained hands-on experience with frameworks like TensorFlow and PyTorch, and learned practical skills such as data preprocessing, model training, evaluation, and fine-tuning.

Q: What projects have you done on deep learning?
A: I have completed several projects involving deep learning techniques, including building image classification models using convolutional neural networks (CNNs), working on time series forecasting with recurrent neural networks (RNNs) and LSTM models, and exploring natural language processing (NLP) tasks such as text classification and sentiment analysis. These projects were part of my coursework and practical assignments at IT-Högskolan.

Q: What projects have you done on computer vision?
A: I have worked on computer vision projects focusing on image processing and classification. Specifically, I built models using convolutional neural networks (CNNs) to recognize and classify images. My projects also included applying techniques like regularization, hyperparameter tuning, and transfer learning to improve model performance. These were part of my practical work during the deep learning course at IT-Högskolan.

Q: What projects have you done on natural language processing (NLP)?

A:
I have worked on several NLP projects during my AI studies and practical training. These include:

- **Text Preprocessing:** Implemented tokenization, lemmatization, and stemming using libraries like NLTK to prepare text data for analysis.
- **Sequence Modeling:** Built Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM) models for tasks such as time series forecasting and text generation.
- **Transformer Models:** Studied and experimented with transformer architectures, including attention mechanisms, to improve language understanding.

- **Named Entity Recognition (NER):** Worked with spaCy and Hugging Face models to identify and classify entities in text.
- **Sentiment Analysis:** Developed classification models to analyze sentiment in text data using supervised learning techniques.
- **Project Work:** Applied these techniques in hands-on projects involving text classification, summarization, and question answering, often using Python frameworks like TensorFlow and PyTorch.

Q: What projects have you done using Python?

A: I have completed multiple projects using Python, including:

- **Data Analysis and Visualization:** Processed and analyzed large datasets using libraries such as Pandas, NumPy, Matplotlib, Seaborn, and Plotly to create insightful visual dashboards and reports.
- **Machine Learning Pipelines:** Developed end-to-end machine learning workflows with scikit-learn, TensorFlow, and PyTorch, including data preprocessing, model training, evaluation, and deployment.
- **Natural Language Processing (NLP):** Built text processing and classification models using libraries like NLTK, spaCy, and Transformer-based architectures.
- **Web Apps:** Created interactive web applications and dashboards with Streamlit, integrating Python backend logic and visualizations for user-friendly interfaces.
- **Automation and Scripting:** Automated data extraction, cleaning, and reporting tasks to improve efficiency and reduce manual work.

Q: Do you understand NLP models?
A: Yes, I have studied and worked with various Natural Language Processing (NLP) models. This includes traditional techniques like tokenization, stemming, and TF-IDF, as well as advanced deep learning models such as Recurrent Neural Networks (RNN), Long Short-Term Memory (LSTM), and Transformer-based architectures like BERT and GPT. I am familiar with tasks such as Named Entity Recognition, Sentiment Analysis, Text Classification, and Language Generation. My training included both theoretical foundations and practical implementation using frameworks like TensorFlow and PyTorch. I've worked on text classification and chatbot development projects.

Q: What projects have you done for model deployment techniques?

A: I have worked on several projects involving model deployment, including:

- **Deploying machine learning models as APIs:** Created RESTful APIs using Flask and FastAPI to serve trained models for real-time predictions.
- **Cloud deployment:** Deployed models on cloud platforms like Azure and AWS, leveraging services such as Azure Machine Learning, AWS SageMaker, and containerization with Docker and Kubernetes.
- **Streamlit-based apps:** Built interactive web apps using Streamlit to demonstrate and deploy models for end-users, integrating frontend interfaces with backend model inference.
- **Continuous integration and delivery (CI/CD):** Implemented automated pipelines for model versioning, testing, and deployment using GitHub Actions and Azure DevOps.
- **Monitoring and maintenance:** Set up monitoring systems to track model performance and trigger retraining or alerts as needed.

Q: What Azure experience do you have?
A: I have practical experience with a range of Azure services, primarily in data engineering and business intelligence. My work includes:

- **Azure Data Factory (ADF):** Building and orchestrating ETL pipelines
- **Azure Data Lake** and **Blob Storage:** Handling structured and unstructured data
- **Azure Analysis Services (Cube):** Creating semantic models for Power BI dashboards
- **Azure SQL Database** and **Azure Synapse Analytics:** For scalable data storage and querying
- **Azure DevOps:** Managing deployment and automation pipelines
- **Azure Key Vault, Azure Monitor, and Azure Functions:** Used in various utility and automation tasks

In addition to hands-on experience, I hold the following Azure certifications:

✅ **1. Microsoft Certified: Azure AI Fundamentals**

🔷 **Emphasizes AI & Gen AI the most**

Focus Areas:

- **Core concepts of AI: Machine learning, deep learning, computer vision, NLP (Natural Language Processing)**
- **Azure AI services: Such as Azure Cognitive Services (e.g., vision, speech, language), Azure OpenAI Service (ChatGPT, DALL·E), Azure Machine Learning**
- **Generative AI: Since 2023, the exam covers Azure OpenAI Service, with content on GPT models, prompt engineering, and ethical use of generative models**

Why it's relevant:
This cert is designed to show foundational understanding of how AI solutions are built and deployed on Azure, including GenAI applications.

🔷 **2. Microsoft Certified: Azure Data Engineer Associate (DP-203)**

🔶 **Emphasizes Data Engineering with light AI touches**

Focus Areas:

- **Design and implement data storage and processing systems**
- **Build and optimize ETL pipelines using Azure Data Factory, Synapse, Data Lake**
- **Some modules include basic ML model integration in Azure Data Factory or Synapse pipelines**

Why it's relevant:
While not focused on AI, it prepares the foundation for AI applications by ensuring clean, accessible data pipelines—essential for any ML or GenAI system.

🔷 **3. Microsoft Certified: Azure Data Fundamentals**

🔶 **Entry-level, broad data focus (light AI)**

Focus Areas:

- **Concepts of relational and non-relational data, data warehousing, big data**
- **Introduces basic data analytics and ML services in Azure**
- **Overview of Power BI, Synapse, Cosmos DB, and basic AI/ML capabilities**

Why it's relevant:
This certification provides a general introduction, including how data supports AI, but it's more high-level and less technical than the other two.

Q: Do you have experience in designing and building AI systems inclusive of leveraging foundation models, fine tuning and RAG services, guardrails and AI governance?

Yes, I have experience and understanding in designing AI systems, particularly through hands-on projects and professional certifications.

I passed the **Databricks Machine Learning Professional certification**, which covered advanced topics such as feature engineering, model lifecycle, MLflow tracking and deployment, and best practices for governance and responsible AI.

In addition, I completed the **Azure AI Fundamentals certification**, which gave me a solid grounding in GenAI concepts, including Azure OpenAI Services, fine-tuning, and responsible deployment.

I have developed an Internal AI Chatbot with Snowflake Cortex. Built a secure, RAG-style chatbot using Streamlit and Snowflake Cortex with vector search and role-level security. Enabled GenAI-based Q&A on internal documentation while maintaining enterprise-grade data governance.

On the practical side, I've developed a **Streamlit-based chatbot using Hugging Face Transformers**, applying the RAG pattern to allow document-based Q&A about my CV. This project uses:

- **Sentence embeddings**
- **Vector search**
- **Custom prompts**
- **Model APIs from Hugging Face**

This has given me hands-on experience with foundational AI building blocks—RAG, vector stores, guardrails, and GenAI orchestration—all of which I'm eager to apply in production-grade environments.