



## Luca Ilchen

Corporate Student - Computer Science

Stuttgart, DE

+49 1520 8876281

luca.ilchen@gmail.com

### Work experience

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#### IBM Deutschland GmbH

2024-10 - today

Corporate Master Student - Professional Software Engineering

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#### IBM Expert Labs, Ehningen, DE

2024-10 - today

- Created a reference architecture that optimized microfrontend deployments on the Red Hat OpenShift Container Platform by implementing automated CI/CD pipelines — facilitating seamless deployment of all repositories within a GitHub organization.
  - Developed web components using WebAssembly and Rust for enhanced performance.
  - Contributed to client projects for large banking systems, delivering robust and secure solutions.
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#### IBM Deutschland GmbH

2021-09 - 2024-09

Corporate Bachelor Student - Computer Science

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#### IBM Switzerland Research, Rueschlikon, CH

2024-05 - 2024-09

- Researched and analyzed materialized view selection techniques for optimizing ETL tool performance.
  - Implemented MVS strategies using Apache Calcite to enhance data integration workflows.
  - Conducted empirical studies to validate optimization methods, improving query response times and resource utilization.
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#### IBM iX Flutter, Munich, DE

2024-01 - 2024-02

- Development of a complete Flutter application, equipped with generative AI through watsonx.
  - Utilization of prompt engineering for a pension advice use-case.
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#### IBM Almaden Research, San Jose, US

2023-06 - 2023-08

- Research on indexing and storage technologies for vector data.
  - Contributed to the expansion and enhancement of PrestoDB, a cluster-based query engine.
  - Development of a REST service using Flask, employing the 'faiss' library (Facebook AI Similarity Search) for efficient similarity searches.
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#### IBM Expert Labs, Ehningen, DE

2022-12 - 2023-03

- Analysis and implementation of 'Cloud Native' design patterns to optimize software development.
  - Development of multiple microservices with Quarkus and Apache Kafka, along with practical experience in deployment and interaction with various databases such as Elasticsearch, Neo4j, and Redis.
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#### IBM iX Studios, Hamburg, DE

2022-03 - 2022-09

- Acquisition of basic skills in UI/UX design.
  - Further education in web development, focusing on React and Next.js.
  - Development and enhancement of internal software, especially for accessibility testing.
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#### IBM Technology Garage, Ehningen, DE

2021-09 - 2021-11

- Acquisition of knowledge and practical skills in React, Redux, and Node.js.
- Participation in the 'VaterSmartHack', which involved developing a frontend application within two days.

## Education

### Knowledge Foundation @ Reutlingen University

2024-10 - 2026-09

Bachelor of Science - Computer Science

### Duale Hochschule Baden-Württemberg

2021-09 - 2024-09

Bachelor of Science - Computer Science

Final Grade: 1.5 (approx. GPA 3.5)

### Katharinen-Gymnasium Ingolstadt

2012-07 - 2021-09

High school diploma (Abitur) - Scientific branch

Final Grade: 1.5 (approx. GPA 3.5)

## Volunteering

### UEFA EURO 2024 - ICT Volunteer

2024-05 - 2024-7

- Supporting the ICT (Information and Communication Technology) team with setting up the event infrastructure like network in the stadium Stuttgart

## Technical Skills

### Design und User Experience

- Design Thinking (Co-Creator Badge, Design Thinking for AI Badge)
- UI/UX Design with Figma
- Design Systems (Carbon Design, Material UI, Human Interface Guidelines)
- Brand Creation and Design

### Data Science and Machine Learning

- Python & R
- OpenAI, AnthropicAI, Llama (prompt engineering)
- IBM Watsonx
- Model deployment, deep learning, vector embeddings, transformers

### Front-End Development

- JavaScript (Frontend & Backend)
- TypeScript
- CSS/Styling (Tailwind, deep CSS understanding)
- React, Next.js (including Next.js 13)
- Svelte, Sveltekit

### Back-End and Microservices

- Java (Mutiny, Quarkus)
- Python (Flask, QuantConnect)
- Docker & Docker Compose
- Kubernetes
- RedHat OpenShift Container Platform
- Apache Kafka
- Microservice development
- IBM Cloud (Operation and Architectural Design)
- C and C#
- Rust

### Mobile Development

- Dart and Flutter
- Android Development with Java

### Database and Storage

- MongoDB
- SQL
- Redis
- Neo4j
- ElasticSearch
- PrestoDB

### Documentation and Collaboration

- Git and GitHub
- Academic writing
- Well-documented code
- Note-taking

## Soft Skills

- Presenting
- Networking and Social Interactions
- Decision Making
- Problem Solving
- Learning Agility
- Resilience

## Languages

**Deutsch** First language  
**Englisch** Fluent, C1 level

## Certifications

Enterprise Design Thinking - Team Essentials for AI	IBM, 2024
Enterprise Design Thinking Co-Creator	IBM, 2024
Python for Finance and Algorithmic Trading with QuantConnect	Udemy, 2023
IBM Cloud Professional Architect Concepts	IBM, 2023
Mastering Typescript -2023 Edition	Udemy, 2023
Docker and Kubernetes: The Complete Guide	Udemy, 2023
Next.js & React - The Complete Guide	Udemy, 2022
Master Digital Product Design: UX Research & UI Design	Udemy, 2022