

# Cedric Immanuel Sillaber

 [github.com/cesipy](https://github.com/cesipy) | [cesipy.github.io](https://cesipy.github.io) | Innsbruck, Austria

## EDUCATION

### University of Innsbruck

Bachelor of Science in Computer Science, Grade: 1.8/5.0 German scale, 3.7/4.0 GPA

- Bachelor Thesis: "Probing Layer-wise Alignment Depth in Multimodal Transformers"
- Research focus: Where is alignment happening in Vision&Language transformers?

Innsbruck, Austria

Sep. 2022 – Dec. 2025

## EXPERIENCE

### Autonomous Driving Intern (Starting Jan. 2026)

Jan. 2026 – Jul. 2026

BMW Group

Munich, Germany

- Developing perception algorithms for autonomous vehicles, focusing on sensor fusion and real-time object detection
- Implementing closed-loop reprocessing pipeline for simulation and validation of autonomous driving systems

### DevOps Engineering Intern

Jul. 2024 – Sep. 2024

Barracuda Networks

Innsbruck, Austria

- Architected infrastructure-as-code solution for Grafana and Jenkins using NixOS, ensuring reproducible configurations across development and production environments
- Built monitoring system using Grafana and Prometheus for 60+ VMware hosts and 1000+ VMs, tracking CPU, memory, and network metrics; custom dashboards
- Set up CI/CD pipelines using Groovy DSL and Configuration as Code, managing 50+ build jobs for test automation

### Technical Legal Assistant Intern

Mar. 2024 – Jun. 2024

Binder Grösswang

Innsbruck, Austria

- Developed legal research assistant prototype using LangChain and Llama, processing 10,000+ legal documents
- Implemented secure on-premise deployment using Docker and VectorDB to maintain data privacy
- Supported intellectual property cases by analyzing technical aspects and providing documentation to legal teams

## PROJECTS

### ML Crypto Market Analysis | Python, PyTorch, Binance API

2024 – Present

- Built ML pipeline for cryptocurrency market analysis using Autoencoders and LSTMs for time series prediction
- Implemented parallel data preprocessing pipeline with feature extraction from raw trade data
- Developed complete testing framework for various model types, currencies, and hyperparameters
- Created backtesting system for trading strategies with Binance API integration

### Distributed Intruder Detection System | Python, AWS, Docker, YOLO

2024

- Built distributed detection system using Docker containers deployed on AWS EC2 instances
- Implemented person detection using YOLO and custom CNN trained on WiseNet dataset
- Designed multi-layer architecture integrating IoT devices, edge processing, and AWS Rekognition

### Smart Workspace Monitor | Java Spring, Python, Raspberry Pi

2024

- Developed IoT workspace monitoring system using Raspberry Pi and Arduino sensors
- Implemented multi-device Bluetooth connections with fault-tolerant SQLite storage
- Built REST API with Spring Boot backend and created Primefaces dashboards for data visualization

### Deep Q-Learning Tetris AI | Python, PyTorch, C, CNNs

2024 – 2025

- Implemented Deep Q-Network from scratch using PyTorch with CNN architecture for state representation
- Developed custom Tetris game engine in C using ncurses, interfacing with Python AI via interprocess communication
- Trained reinforcement learning agent to play Tetris autonomously, learning optimal piece placement strategies
- Achieved efficient real-time performance through custom C/Python IPC bridge for game state and action transfer

## TECHNICAL SKILLS

**Languages:** Python, C/C++, Java, SQL, Haskell, Groovy

**Frameworks & Libraries:** PyTorch, Keras, LangChain, Spring Boot, Flask, Docker, NixOS

**Developer Tools:** Git, AWS, Jenkins, Grafana, Prometheus, Linux, VMware

**Machine Learning:** Deep Learning, LSTMs, CNNs, Computer Vision, Edge AI, Transformer, Reinforcement Learning