MILOŠ ŠOLAJA

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EDUCATION

TU Munich | *M.Sc. Robotics, Cognition, Intelligence* **2021 - 2023**

Covered Courses: Machine and Deep Learning · Computer Vision · AI Foundations · Robotics and Motion Planning in Robotics · Advanced Seminar in Digital Transformation (Sponsored by SAP) · Autonomous Driving and Software Development for Autonomous Driving · Principles of Economics

Master thesis in cooperation with Fraunhofer IGCV
Topic of the thesis: Development of a Chatbot for the Detection of Human Support Level for Cognitive Assistance Systems in Manual Assembly (Grade: 1,0)

- Developed a dialog system that leverages voice and text inputs to improve the handling and configuration of CAS
- Performed research and comparison of NLP and dialog system approaches, selecting the most suitable ones for this use case
- Compared various sentiment analysis techniques and fine-tuned a BERT model
- Integrated the dialog system into the existing infrastructure

TU Munich | *B.Sc. Mechanical Engineering* **2017 - 2021**

Covered Courses: Mathematics and Mathematical Tools · Modeling of Uncertainty and Data · Basics of Modern Information Technology · Automatic Control · Engineering Mechanics · Industrial Software Engineering · Investment and Financial Management

Bachelor thesis in cooperation with Filics GmbH
Topic of the thesis: Design, Specification, and Implementation of Different Operating Modes for an Autonomous Guided Vehicle for Intralogistics (Grade: 1,0)

- Defined and implemented measures to ensure the safety and stability of an autonomous guided vehicle in different situations
- The measures involved various modes for Lidar safety sensors, triggers for their activation, and safety constraints for the vehicle's control system

EXPERIENCE

Freelance **April 2024 - Present**
Freelance AI/ML & Full-Stack Developer **Remote**

- Design, development and deployment of AI/ML-based systems and web & mobile applications.

Python | React | FastAPI | PyTorch

Fraunhofer IGCV **August 2023 - January 2024**
Student Research Assistant and Master Thesis **Augsburg, Germany**

- Developed custom software used for coordination between cognitive assistance systems (CAS) within manual assembly

Python | PyQt5 | PyTorch | Rasa

BMW AG **February 2021 - September 2022**
Working Student - Research Department Munich, Germany

- Conducted technology scouting and research in the field of emerging software technologies
- Led the research, analysis, and evaluation of new technologies relevant to the BMW ecosystem, including prototype development
- Developed prototypes:
  - SSI Login Integration: Integrated Self-Sovereign Identity (SSI) login into the existing infrastructure to enhance authentication processes
  - Dynamic Ambient Light for In-Car Gaming: Designed a prototype to synchronize ambient lighting with in-car gaming experiences

Android | React | Python | Hyperledger | Powerpoint

SKILLS

Technical

- OS: Microsoft Windows, Mac OS, Ubuntu Linux
- Machine Learning/Deep Learning Tools: PyTorch, Pandas, Scikit-learn, Numpy, Matplotlib
- Cloud Platforms: Azure and AWS (basic knowledge and hands-on experience)
- Mobile: Android Kotlin/Java, React Native
- Automotive: Android Auto and Automotive OS
- Web: React.js, HTML/CSS
- Databases: MySQL, MongoDB (NoSQL)
- Backend Frameworks: Flask, FastAPI
- Development Tools: Git, Docker, VS Code
- Prototyping: Protopie
- Engineering Tools: MATLAB/Simulink, Autodesk Inventor, CATIA
- Arduino, Raspberry Pi
- Microsoft Office

Languages

- Serbian — Native
- German — Full Professional Proficiency
- English — Full Professional Proficiency
- Italian — Elementary Proficiency

PROJECTS

PROJECT "THE INTELLIGENT ANAMNESIS" **September 2023 - December 2023**
Data Scientist Munich, Germany

- Part of TUM.AI Industry Phase 5
- Project goal was to train a model that determines patient's diagnosis based on answers from a predefined questionnaire
- Developed a pipeline based on various NLP techniques (pattern matching, word embeddings, LLMs) for creating the dataset essential for model training

Python | PyTorch | LLMs | NLP | Docker

PROJECT "HYPERAUTOMATION FOR MARKETING" **October 2022 - March 2023**
Project Lead Munich, Germany

- Completed a project as part of the Advanced Practical Course at the Chair of Robotics, Artificial Intelligence, and Real-Time Systems, TU Munich
- Led a team that developed a prototype used to hyper-automate the creation and posting process of social media content with a self-improvement mechanism

- The prototype takes text input and generates visually and content-wise appealing posts for social media, including images, short text, and hashtags

Python | PyTorch | MongoDB | GenAI | ML/DL Models

PUBLICATIONS

Klaus Fink, Miloš Šolaja, Rüdiger Daub. Empowering Manual Assembly: Dialog System for Enhanced Customization and Efficiency of Cognitive Assistance Systems, 18th CIRP Conference on Intelligent Computation in Manufacturing Engineering, 10-12 July, Naples, Italy.

OTHER ACTIVITIES

- CDTM InnoLabs participant 2024
- Model United Nations (MUNTUM) Delegate 2021-2022