Mohammaderfan Koupaei

SOFTWARE ENGINEER

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SUMMARY

As a Computer Science Engineering graduate from BME University Budapest, my academic achievements include ranking within the top ten students by GPA. My thesis concentrated on applying machine learning techniques, notably NLP and GPT models, to music generation. With proficiency in C++ and Python, my focus lies in exploring technology's potential to address complex challenges, aiming to contribute significantly to research and development in an academic setting.

EDUCATION HISTORY

Bachelor of Computer science engineering

Budapest university of technology(BME)

2020-2024

- GPA 4.14 / 5
- software engineering specialisation
- Member of the scientific assistance team under the supervision of LÁSZLÓ GRAD-GYENGE.

WORK EXPERIENCE

TimeTrack Gmbh

Full stack developer

2022 - 2023

- Enhanced customer experience by developing a Personio-TimeTrack synchronization feature, resulting in a 40% usability boost.
- Designed and implemented key TimeTrack app features, optimizing user functionality.
- Revamped database schemas for improved data management and performance.
- Led migration from AngularJS to Angular for a more modern and maintainable codebase.
- Collaborated cross-functionally to align product development with business objectives.

INTERNSHIP

Artive Budapest

Full Stack Developer Intern

Jun 2022 - Sep 2022 (Summer Internaship)

- Designed backend structures for chatbot operations.
- Optimized and debugged chatbot systems.
- Executed tests for chatbot functionality and performance.
- Collaborated with frontend developers, UX/UI designers, and data scientists.
- Continuously updated knowledge on chatbot technologies and best practices.

RESEARCH INTREST

- MACHINE LEARNING
- NEURAL NETWORKS
- ALGORITHMS DESIGN
- DATA SCIENCE
- DEEP LEARNING
- REINFORCEMENT LEARNING
- NATURAL LANGUAGE PROCESSING
- COMPUTER VISION

Workshops

- HANDS-ON MACHINE LEARNING WORKSHOP**(GDG BUDAPEST)**
- AUTOMOTIVE AND AEROSPACE DESIGN FOR CRASHWORTHINES**(TUM UNIVERSITY)**
- HASH CODE TEAM PROGRAMMING COMPETITION

PROJECTS

- **Music Predictor**
  - Utilized ML, NLP, GPT, Python, TensorFlow, and MIDI Libraries
  - Developed a system that predicts the next note or chord in a music sequence, trained on numerous classic pieces for accurate results.

- **NLP-Based Chatbot**
  - Backend Development & AI Integration, Python, Flask, GPT-2
  - Designed a chatbot for a hypothetical e-commerce site using Flask and Python, ensuring accurate and swift responses to user queries through integration with GPT-2.

- **E-Commerce Backend Optimization**
  - Database & Backend Enhancement, Python, SQL, Django
  - Enhanced an e-commerce website's backend using Django and Python. Refinement of database schemas in SQL resulted in improved query speeds by 30%.

- **Secure File Transfer Platform**
  - Networking & Software Development, Python, SSL/TLS Protocols
  - Created a secure platform for transferring files over the internet using Python. Implemented SSL/TLS protocols for encryption, ensuring secure data transmission.

- **API Gateway**
  - API Development & Integration, Node.js, Express.js, JWT
  - Developed an API gateway using Node.js and Express.js to manage, route, and secure API calls for microservices. Secure authentication with JWT streamlines API interactions.

- **Software Testing Automation**
  - Automated Testing Solutions, Python, Selenium, PyTest
  - Built an automated test suite for a web application using Python. Selenium and PyTest ensure software stability across versions.

- **Migration Assistance Tool**
  - Software Development & Database Management, AngularJS, Angular, Python
  - Created a tool in Python to aid developers in migrating projects from AngularJS to Angular. The tool provides scripts and a dashboard, making the migration process more manageable.

THESIS

Music Generation using deep learning algortihms

Supervisor: LÁSZLÓ GRAD-GYENGE

- seq2seq transformers techniques
- word2vec embedding
- LSTM model
- benchmarking

full desciption of thesis(here)

REFERENCES

LÁSZLÓ GRAD-GYENGE

- **Institution**: BME University Budapest
- **Contact** : grad-gyenge.laszlo@bme.hu
- **Context**: Thesis supervisor and mentor during my final year project on machine learning applications in music generation.
- **Highlights of Recommendation**: prof. LÁSZLÓ highlighted my analytical skills, innovative approach to problem-solving, and exceptional ability to apply complex machine learning theories to practical projects. he noted my proactive engagement in academic discussions and consistent top-tier performance in coursework.

MAHMOUD IBRAHIM AZMI DARWISH

- **Institution**: BME University Budapest
- **Contact Information**: darwishm@edu.bme.hu
- **Context**: Professor Darwish provided guidance and supervision in the laboratory section of my course.
- **Highlights of Recommendation**: Prof. Darwish commended my contributions in the laboratory, noting my exceptional performance and high-quality work in lab activities and group projects. He recognized my strong collaborative skills and willingness to support lab assistants, highlighting my role as a valuable and proactive team member.

Dr. Balla Katalin

- **Institution:** BME University Budapest
- **Group:** Software Technology
- **Contact :** balla.katalin@vik.bme.hu
- **Context:** Dr. Katalin provided instruction and mentorship in software requirements elicitation, design, and development.
- **Highlights of Recommendation:** Dr. Katalin rated my overall performance as very good, acknowledging my comprehensive technological knowledge and professional curiosity in software design and development. She also commended my teamwork skills and ability to collaborate effectively within a group setting.

David Sik

- **Institution:** Budapest University of Technology and Economics
- **Contact Information:** Sik.David@aut.bme.hu
- **Context:** Supervised my work in the Mobile and Web-based Software course.
- **Highlights of Recommendation:** The professor recognized my performance as outstanding, with a perfect score of 5 out of 5 in the course. Praised for my adept use of Kotlin for Android and web technologies like HTML, CSS, JavaScript, and Bootstrap, I was noted for high-caliber project work, creativity, and excellent teamwork abilities. The recommendation emphasized my potential for future academic and professional endeavors.

Mohammad Saleem

- **Institution:** Budapest University of Technology and Economics
- **Contact Information:** Mohammad.Saleem@aut.bme.hu
- **Context:** Provided instruction and oversight in a data-driven programming course focusing on .NET, MongoDB, and Xamarin.
- **Highlights of Recommendation:** Professor Saleem can attest to my proficiency with Microsoft technologies as applied in a practical, data-driven programming context. My coursework under his mentorship involved developing robust applications using .NET, implementing databases with MongoDB, and creating cross-platform mobile applications with Xamarin, demonstrating my versatile skill set in modern software development.