Oliver N Watson

Software Engineer / Machine Learning Engineer

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Data and Software Engineer with 5 years of industry experience. My background combines fullstack software development at EY and research in Deep Learning and audio signal processing at Fraunhofer IIS. Seeking positions in Software Development or ML/AI teams to develop innovative solutions in an interdisciplinary team.

WORK EXPERIENCE

Fraunhofer IIS - Erlangen, DE

Graduate Research Assistant
Oct 2022 - Aug 2024

- Implemented CycleGAN-based speech synthesis (EGG → mic) for voice conversion.
- Designed hybrid loss functions to improve audio quality (Cyclic + Mel).
- Applied Differentiable DSP techniques for signal enhancement.
- Evaluated models using WVMOS, Neural MOS, and ASR-based metrics.

Otto von Guericke Universität - Magdeburg, DE

Student Research Assistant
Aug 2022 - Oct 2022

- Supported Voice Anonymization research project through preparation and preprocessing of voice datasets as well as retrained components of StarGAN Voice Conversion architecture to assess anonymization efficacy

Student Teaching Assistant
Apr 2020 - Jul 2020

- Conducted Übung sessions for TensorFlow and deep learning coursework.
- Supported coding assignments and student Q&A, evaluating weekly submissions

EY Digital Technologies, Bangalore, IN — Jul 2015 - Oct 2018

Senior Software Engineer (promoted from Associate)

- Developed full-stack applications using C# .NET, ASP.NET, MS SQL, MS Azure, Angular, AngularJS, React, JavaScript, and jQuery for multiple enterprise-level projects across domains such as tax, e-commerce, agribusiness, telecom in an agile environment
- Played a key role in the development team for a large-scale e-commerce platform for a major Australian agribusiness, contributing to the full stack, database setup on Azure, and deployments.
- Analyzed and refactored code using optimization tools to drastically improve application performance for processing millions of tax-related records for partner tax detail generation
- Conducted extensive performance optimization and tuning of SQL queries, SSIS packages, implementing partitioning strategies and database restructuring to handle large-scale data processing efficiently
- Led the end-to-end development of a Risk Analysis Platform with interactive map-based dashboards, including requirement gathering, database design, prototyping, and deployment

EDUCATION

M. Sc. - Data & Knowledge Engineering *

Otto von Guericke Universität, Magdeburg - https://ovgu.de/

Core: Machine Learning, Deep Learning, Information Retrieval, Music Information Retrieval, Advanced Data Mining, Evolutionary Multi-Objective Optimization, Applied Discrete Modelling, Simulation

B. E. - Information Science & Engineering
2015

Visvesvaraya Technological University, India - https://vtu.ac.in/

- Elected as ISE Branch President
- Won over 20 national and state-level programming and quiz competitions

SKILLS

- Python, C# .NET, C++
- Tensorflow, PyTorch, GANs, Transformers, DDSP, NLP
- Huggingface, NLTK, Librosa, Numpy, Pandas, Scikit-Learn, Matplotlib
- SQL Server, MySQL, SSIS, Azure
- Rest API, HTML, JavaScript, TypeScript, CSS, Flask, Angular, React, NextJS, MUI, Bootstrap
- TFS, Git, Jira, Linux

PROJECTS

AI Song Contest | 2022, 2021

Participated in two international AI Song Contests, experimenting with models like GPT-2/3, SampleRNN and NSynth for lyric and music generation
https://www.aisongcontest.com/2022/~
https://www.aisongcontest.com/2021/~

Phantom Oktoberfest

Collaborative art and science project modelling the ambient crowd sounds at an Oktoberfest festival
https://oktoberfestphantom.com/

Summarization for Database Vocalisation

Proposed and evaluated a novel transformer-based model architectures (BERT, ProphetNet) to summarize database query results for vocalization, aiding non-visual comprehension

Real-time Topic Modelling

Built a pipeline that enables the user to extract, classify and visualize disruptive events, such as accidents, floods, wildfires etc, from live-stream Twitter data, visualizing the evolution of topics over time using Dynamic Topic Modelling for each event

Karnataka Theological College Website

Developed and maintain website and hosting. Built using NextJS (static) and MaterialUI
https://ktc.edu.in

LANGUAGES

English (native), Deutsch (C1), Kannada, Hindi, Tulu, Spanish (basic)

HOBBIES

Gaming, Football, Reading, Guitar, Piano, Hiking