Krzysztof Mrozinski

Portfolio | Email | Linkedin | GitHub

Profile

Startup co-founder developing an AI-driven language learning platform. MSci Computing Science graduate proficient in Natural Language Processing, Machine Learning and Full-stack development. Experienced Python programmer.

Education

Computing Science MSci, University of Glasgow *First-Class* **2018 - 2023**
Artificial Intelligence, Machine Learning, Deep Learning

Experience

Vocabua App Showcase | LM Showcase | Website **2023 - Present**
Co-founder, Lead of Machine Learning & NLP

- Co-founded and led the ML development of a language learning platform powered by generative language models, gaining experience in the creation and management of large-scale team-based software projects.
- Designed and implemented a novel language model inference algorithm manipulating logit values to generate personalised reading material aligned with learner vocabulary knowledge.
- Built an MLOps pipeline for data processing, model training, evaluation, and deployment of language models using Sagemaker, Huggingface, and WandB, ensuring efficient and reliable performance.
- Created a secure and robust AWS infrastructure, with focus on Python-based serverless scripting with Lambda. Experience with implementing best practices for data security, including IAM roles and policies.
- Developed a responsive web application with React, integrating proprietary language models into a user-friendly experience. Experience with API integration to dynamically move data between the frontend and backend.
- Designed and maintained a DynamoDB database and GraphQL schema for efficient data management, creating queries and mutations to handle large-scale data retrieval and updates.

Academic Projects

Fourier-based Audio Dynamic Matching (Masters Dissertation) *Grade A* Paper **2023**
Research, Signal Processing, Mathematical Optimisation, Data Science

- Formulated a novel matching algorithm for audio mastering styles using Fourier analysis and optimisation techniques.
- Gained comprehensive experience with the research lifecycle, including literature review, hypothesis formulation, data collection, and analysis.

Software Effects Pedal (Honours Dissertation) *Grade A* Paper **2022**
Software Development, Python, Signal Processing

- Created Python-based modular audio manipulation software, using Numpy for the implementation of various audio manipulation algorithms.

Tower Builder (Year 3 Group Project) *Grade A* Presentation **2021**
Mobile Application, Unity, Agile Software Development

- Developed a Unity-based mobile application to promote student engagement with academic content.
- Lead a team under Agile scrum workflow, working to align with stakeholder objectives and project timelines.

Personal Projects

WhatsApp Chat Analyser Article **2023**
Python, Data Science, NLP, Numpy, Matplotlib

- Developed a python project for the analysis of user WhatsApp chat data using Numpy, focusing on deriving numerical analytics with NLP techniques.

TangoRec: Intelligent Vocabulary Recommendation for Japanese Language Learning Article **2023**
Python, NLP, Software Development

- Developed a Python-based NLP application to enhance Japanese language learning, gaining experience in handling the complexities of Japanese NLP.

Technical Skills

Languages: Python, JavaScript, Java, C/C++, SQL, HTML/CSS, Haskell
Technologies: AWS (Sagemaker, Lambda, API Gateway, DynamoDB, Amplify, IAM), React, PyTorch, Transformers, Numpy, Matplotlib

Interests

- Self-taught proficiency in Japanese (JLPT N2-equivalent).
- Hobbyist music producer with over 10 million streams, collaboration with international labels to sell physical merchandise, and experience with freelance composition for major video game companies.