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● WORK EXPERIENCE

02/2024 – CURRENT Oradea, Romania

AI AND ML SOFTWARE ENGINEER NEWWORK SOFTWARE

Tasked with creating OpenAPI Microservices within a new modern and intelligent ERP system.

Main role in a AI microservice for parsing and analyzing documents:

- End goal of extracting key information from various types of documents.
- Types of documents supported: Invoices, Receipts, Resumes, Business Cards.
- Supported document formats: PDFs and Images.
- Multi-language support.
- Multi-file support.
- Predefined or user-defined information extraction.
- Focus on Accuracy AND Speed.
- Designing and maintaining the end-to-end microservice.
- Adjusting the microservice to new technologies and requirements.
- Developing a API microservice solution that is: modular, maintainable, extensible, and reusable.

Main role in a AI microservice for LLM prompting:

- End goal of allowing users to create, test, run, and manage their own LLM prompting systems, without any coding involved (low-coder app).
- Architecture that includes different AI Service Providers and their associated AI Models.
- Allow users to run CRUD operations on Prompts.
- Versioning support for Prompts.
- Allow for variables in Prompts, custom model configuration, and different response formats (text and JSON).
- Designing and maintaining the end-to-end microservice.
- Adjusting the microservice to new technologies and requirements.
- Developing a API microservice solution that is: modular, maintainable, extensible, and reusable.

Main role in a microservice for traditional Machine Learning:

- End goal of allowing the users to train, evaluate, compare and execute their own ML models, using their own data, without any coding involved (low-coder app).
- Types of ML tasks supported: classification, regression, clustering, time-series forecasting, anomaly detection.
- Allow users to experiment with different models, parameters, and datasets combinations to find the best solution in an automated manner.
- Store experiment results and trained models for later use.
- Retrain existing models on new datasets.
- Use stored models to make predictions.
- Allow users to manage their models and predictions.
- Designing and maintaining the end-to-end microservice.
- Developing a API microservice solution that is: modular, maintainable, extensible, and reusable.

Main role in a AI microservice for translations:

- End goal of allowing users to run AI powered translations.
- Translations for multiple languages, with support for language locale, i.e. en-UK to en-US.
- Support for batch translations.
- Designing and maintaining the end-to-end microservice.
- Developing a API microservice solution that is: modular, maintainable, extensible, and reusable.

Minor role in a AI chat-bot system:

- End goal of allowing users to run internal ERP flows or actions directly from chat.
- Creation of an Expense Agent that can help the users to create and/or update traveling Expense resources.
- Verifying that the user provides all the required information before starting the process.
- Integrating other internal backend functionalities to cover all necessary steps in the Expense process and ensure they are followed correctly.

Other roles in minor POC projects and initiatives.

Main activities consisting of:

1. Research state of the art models, approaches, and techniques.
2. Select the best fit solution based on requirements and limitations.
3. Design, implement, and test AI/ML powered microservices with respect to OpenAPI standards.
4. Support for CI/CD.
5. Integrate AI/ML microservices in the overall ERP system.
6. Source code documentation.
7. Software review.
8. Provide other team members with technical or theoretical support.

Main Python libraries used: OpenAI, FastAPI, Uvicorn, PyMongo, Motor, Beanie, PyCaret, Pandas, NumPy, Pydantic, PyMuPDF, Pillow, SQLAlchemy.

10/2022 – 02/2024 Oradea, Romania

MACHINE LEARNING ENGINEER VODAFONE INTELLIGENT SOLUTIONS

Researcher and Developer, part of the MLOps teams.

Main role in a project tasked with forecasting the state of various systems/servers:

1. End goal of forecasting the future states, like the I/O or CPU usage, using past and present data.
2. Understanding and manipulating large streams of temporal data.
3. Temporal data processing and manipulation, including feature selection.
4. Training, testing, and evaluating different Neural Network architectures.
5. Designing the end-to-end pipeline of the product, from data collection to future state forecasting.
6. Developing a software solution that is: modular, maintainable, extensible, and reusable.
7. Coordinating and helping other team members involved in the project.
8. Presenting performance metrics and charts to internal customers.

Main role in a project tasked with estimating the power consumption of various systems/servers:

1. End goal of estimating historic power consumption of various systems given a small sample or real measurements.
2. Understanding and manipulating medium size tabular data.
3. Training, testing, and evaluating different classic ML models (Random Forest, SGD, Linear Regression)
4. Designing the pipeline of the product, from data processing/cleaning to power consumption estimation.
5. Developing a software solution that is: modular, maintainable, extensible, and reusable.
6. Coordinating and helping other team members involved in the project.
7. Presenting performance metrics and charts to internal customers.

Main role in the creation of documents/tutorials used to upskill less experience or new team members:

1. Coding standards and best practices (theory and practice in Python).
2. Software design and recommendations (theory and practice in Python).
3. Version control best practices (theory and practice in Git/GitLab/Python).
4. Code review, how-to and recommendations.

Main activities consisting of:

1. Research state of the art algorithms, models, and approaches.
2. Select the best fit solution based on requirements and limitations.
3. Design, implement, and test software products.
4. Source code and product documentation.
5. Create helpful software engineering resources like tutorials and how-to guides.
6. EDA, data visualization, and presentation.
7. Review and improve other ML solutions within the team.

Main Python libraries used: Keras, PyTorch, Scikit-learn, SciPy, NumPy, Pandas, Matplotlib, Statsmodels, Tsfresh.

04/2021 – 10/2022 Oradea, Romania

MACHINE LEARNING RESEARCHER CICADA TECHNOLOGIES

Researcher and Developer in a major project regarding Social Media and TV surveillance and behavior analysis.

Main role in the project regarding the research and development of various Natural Language Processing (NLP) tasks for Romanian and English texts:

1. Sentiment Analysis
2. Topic Classification

3. Key word(s) identification
4. Named Entity Recognition
5. Text summarization

Main activities consisting of:

1. Research and identification of state of the art algorithms, models, and approaches.
2. Identification of scalable NLP solutions for large volumes of texts.
3. Development, testing, and performance comparison of machine learning models/approaches.
4. Development and testing of a custom statistics module.
5. Development and testing of various minor algorithms.
6. Code and platform documentation.

Classic machine learning algorithms used: Latent Dirichlet Allocation, Naive Bayes, Random Forests, Logistic Regressions, Support Vector Machines.

Deep learning algorithms used: Autoencoders, DNN, CNN, LSTM, BERT.

Main Python libraries used: Scikit-learn, Keras/Tensorflow, Transformers, NumPy, SciPy, Pandas, spaCy, NLTK, Gensim, Matplotlib.

09/2019 – 11/2019 Oradea, Romania

MACHINE LEARNING ENGINEER QUBIZ

Part of the Research and Development team.

Main activities consisting of: data processing, analytics, and visualization.

Main Python libraries used: Scikit-learn, NumPy, SciPy, Pandas, Matplotlib.

10/2017 – 09/2019 Cluj-Napoca, Romania

MACHINE LEARNING ENGINEER PORSCHE-ENGINEERING

Researcher and Developer in multiple projects regarding Machine Learning models for classification, clustering, and time series analysis.

Main activities consisting of:

1. Research and identification of state of the art algorithms, models, and approaches.
2. Data processing and analytics.
3. Data exploration and visualization.
4. Development and testing of machine learning models/approaches.

Machine learning algorithms developed using car sensor data:

1. Supervised (SVM, Random Forests) - for Tire to Road Friction Estimation.
2. Unsupervised (K-means, KML3D) - for Driving Style Profiling.

Recommender systems developed for various vehicle infotainment apps: phone, radio, and navigation. Python, R, and Weka used for development.

11/2016 – 09/2017 Cluj-Napoca, Romania

RESEARCH ANALYST "BOBEȘ-BOLYAI" UNIVERSITY

Research and development of a Peer-To-Peer driven simulator for digital service markets using Java's PeerSim Framework.

● **EDUCATION AND TRAINING**

2017 – CURRENT Cluj-Napoca, Romania

DOCTOR OF PHILOSOPHY (PHD) IN CYBERNETICS AND STATISTICS "Babeș-Bolyai" University, Faculty of Economic Sciences and Business Administration

2015 – 2017 Cluj-Napoca, Romania

MASTER OF SCIENCE IN BUSINESS MODELING AND DISTRIBUTED COMPUTING "Babeș-Bolyai" University, Faculty of Economic Sciences and Business Administration

2012 – 2015 Cluj-Napoca, Romania

BACHELOR OF SCIENCE IN BUSINESS INFORMATION SYSTEMS "Babes-Bolyai" University, Faculty of Economic Sciences and Business Administration

LANGUAGE SKILLSMother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C2	C1	C1	C2
GERMAN	A1	A1	A1	A1	A1

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user***PUBLICATIONS**

2025

["BERTweetRO: pre-trained language models for Romanian social media content" Studia Universitas Babeş-Bolyai Oeconomica, volume 80, issue 1, pp. 83-111](#)

2022

["Towards Sentiment Analysis for Romanian Twitter Content" Algorithms 2022, 15\(10\):357](#)

2022

["Topic Classification for Short Texts" In International Conference on Information Systems Development, , pp. 207-222, Cham: Springer International Publishing, 2022](#)

2017

"A Peer-to-Peer Driven Simulation Engine for Digital Service Markets" Proceedings of the 16th International Conference on Informatics in Economy, pp. 39-45, Bucharest, Romania, 2017**HONOURS AND AWARDS**

2015

Backgammon simulator using advanced search algorithms (.NET WPF implementation) – Asociația Facultăților de Economie din România (AFER)

Second Place in the National Olympiad, Business Information Systems, Bucharest, Romania, 2015

ORGANISATIONAL SKILLS**Organizational skills**

- highly organized and goal oriented
- hard working and problem solver
- excellent analytical skills with the ability to analyze situations accurately and effectively
- fast learner
- creative
- punctual

COMMUNICATION AND INTERPERSONAL SKILLS**Communication and interpersonal skills**

- highly sociable
- calm personality

- good listener
- clear and effective communication
- good public speaking skills

● **DIGITAL SKILLS**

Self-assessment grid

Programming/Computer Science Field knowledge:

Good knowledge of programming paradigms: imperative, procedural, functional, and OOP.

Good knowledge of: AI and Machine Learning, Genetic Algorithms, Data Mining, and Statistics.

Decent or basic knowledge of: Peer-To-Peer Technology, Parallel Programming, Semantic Web, Cloud Computing, Distributed Systems, Big Data, Process Mining.

Basic knowledge of data bases.

Programming languages:

- Advanced: Python.
- Intermediate: Java, R
- Beginner: C/C++, C#, SQL.

Technologies: OpenAI, Azure OpenAI, MongoDB, Git, Weka, Hue, Zeppelin, Jira, Confluence, Windows, Linux.