



WYDZIAŁ ELEKTRONIKI,
TELEKOMUNIKACJI
I INFORMATYKI

Research project report

Project team:	1. Maciej Dziewit - leader 2. Paweł Sienkiewicz
Supervisor:	Agnieszka Czapiewska
Client:	Paweł Czapiewski (Solution sp. z o.o.)
Project ID:	196
Date:	12.06.2024

1. Introduction

1.1. Key words

LLM, assessment, tasks, Finetuning, prompt engineering, metrics, AC/DC

1.2. Aim of the report

The purpose of this report is to present what has been accomplished so far in the project. Additionally, it will outline the action plans for the next semester.

1.3. Terminology

AC/DC - assessment center / development center

2. Project results

2.1. Initial assumptions

The project aim is to create, implement and evaluate a system for verifying candidates soft skills. This system is intended to use generative artificial intelligence to automatically create tasks during AC/DC (Assessment Center/Development Center) sessions.

The project is carried out for Solution.zoo, a company that deals mainly with personnel consulting and managerial training. One of their products is the AC/DC session. These sessions are a complex skills assessment process in which participants are observed and assessed by a team of trained assessors as they perform multiple tasks.

The aim of the project is to create a system that will use generative artificial intelligence to automatically create tasks during AC/DC sessions. The system is to be based on large language models

As a result the system is intended to replace assessors with objective artificial intelligence

2.2. Scope of work

In the first semester our main goal was to get acquainted with literature connected to our project. Other goals were to get acquainted with and prepare the programming environment and tools. We also had to become familiar with large language models, so our next task was to understand how they work. Our task was to understand what a transformer is and how it works.

Also we had to understand what tasks such a system should prepare tasks for the candidates in such assessment sessions.

Table 2.1 - Tasks during projects

Task	Task completion date
First meeting	18.03

Meet people from the company and make plans for the semester	25.03
Review of the literature	22.04
Understanding LLM and transformer.	6.05
Complete AC/DC session Task	13.05
Finetune a small language model	20.05
Prepare and present presentations	3.06
Prepare a project folder	10.06

2.3. Distribution of work

Table 2.2 - Distribution of work

Name	Responsibilities
Maciej Dziwit	Leader, distributing work, review of the literature, arranging meetings
Paweł Sienkiewicz	review of the literature, fine-tuning of small language model

2.4. Results achieved

During the first semester, a literature review was conducted on topics such as large language model architectures, fine-tuning of language models, and metrics used to evaluate such models. Particularly important were articles on content generation using large language models and articles on prompt engineering. Subsequently, the entire research group familiarized themselves with AC/DC sessions to thoroughly understand the competency assessment process and all the measures used for this purpose. As part of the training, a small language model was fine-tuned. The group also familiarized themselves with the currently best language models.

2.5. Plans for next semester

To be done: selecting the appropriate language model, fine-tuning the chosen language model, considering the construction of prompts based on which content will be generated, testing and analyzing the generated content.