

**IMPLEMENTASI METODE *FINE-TUNING* BERBASIS *LARGE LANGUAGE MODEL (LLM)* LLAMA3 DALAM MEMBUAT TEKS
INTERVENSI AFEKTIF**

SKRIPSI

diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar Sarjana
Komputer pada Program Studi Rekayasa Perangkat Lunak



Oleh
Calzy Akmal Indyramdhani
NIM 2101569

**PRORAM STUDI REKAYASA PERANGKAT LUNAK
KAMPUS UPI DI CIBIRU
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MODEL (LLM) LLAMA3 DALAM MEMBUAT TEKS INTERVENSI
AFEKTIF

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Calzy Akmal Indyramdhani

Sebuah skripsi yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
Sarjana Komputer pada Kampus UPI di Cibiru

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Januari 2025

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HALAMAN PENGESAHAN

Calzy Akmal Indyramdhani

IMPLEMENTASI METODE *FINE-TUNING* BERBASIS *LARGE LANGUAGE MODEL* (LLM) LLAMA3 DALAM MEMBUAT TEKS INTERVENSI AFEKTIF

Disetujui dan disahkan oleh tim pembimbing:

Pembimbing I



Asyifa Imanda Septiana, S.Pd., M.Eng.

NIP 920190219920228201

Pembimbing II



Indira Syawahodya, S.Kom., M.Kom.

NIP 920190219920423201

Mengetahui,

Ketua Program Studi Rekayasa Perangkat Lunak



Mochamad Iqbal Ardimansyah, S.T., M.Kom.

NIP 920190219910328101

PERNYATAAN KEASLIAN SKRIPSI DAN BEBAS PLAGIARISME

Dengan ini saya menyatakan bahwa skripsi dengan judul Implementasi Metode *Fine-Tuning* Berbasis *Large Language Model* (LLM) Llama3 Dalam Membuat Teks Intervensi Afektif ini beserta seluruh isinya adalah benar-benar karya saya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika ilmu yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini, saya siap menanggung risiko sanksi apabila di kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya ini.

Bandung, Januari 2025



Calzy Akmal Indyramdhani

NIM 2101569

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LANGUAGE MODEL (LLM) LLAMA3 DALAM MEMBUAT TEKS
INTERVENSI AFEKTIF**

CALZY AKMAL INDYRAMDHANI

NIM 2101569

ABSTRAK

Teks intervensi afektif merupakan teks yang diberikan dengan tujuan meningkatkan motivasi peserta didik pada proses pembelajaran. Penelitian sebelumnya telah mengimplementasikan penerapan teks intervensi afektif pada aplikasi Emodu, namun, sistem yang digunakan belum dapat memberikan teks yang adaptif dan lebih bervariasi. Penelitian yang dilakukan mengusung penggunaan *Large Language Model* (LLM) berbasis Llama 3 sebagai metode untuk menghasilkan teks intervensi afektif yang lebih bervariasi serta tidak mengandalkan sebatas pada data yang ada melalui metode *fine-tuning*, yang bertujuan untuk melihat perbandingan kemampuan *base model* dan model yang telah melalui proses tersebut. Pendekatan ini memanfaatkan kemampuan Llama 3 dalam memahami struktur semantik kalimat serta menghasilkan kalimat serupa dengan makna yang mendekati data yang ada. Kualitas kalimat yang dihasilkan mencapai nilai rata-rata sebesar 6,8% lebih tinggi dibandingkan *base model* pada metrik ROUGE, dan 3,6% lebih tinggi dibanding *base model* pada metrik BERTScore. Temuan ini membuka peluang besar pada pemanfaatan LLM khususnya Llama 3 pada tugas *Affective Text-generation* (ATG) dan memberikan jalan pada pengembangan *Artificial Intelligence* (AI) pada bidang komputasi afektif.

Kata Kunci: Teks Intervensi Afektif, Komputasi Afektif, *Affective Text-generation*, *Large Language Model* (LLM) dan Llama 3

**IMPLEMENTATION OF FINE-TUNING METHODE BASED ON LARGE
LANGUAGE MODEL (LLM) LLAMA3 ON CREATING AFFECTIVE TEXT
INTERVENTION**

CALZY AKMAL INDYRAMDHANI

NIM 2101569

ABSTRACT

Affective text intervention refers to text provided with the aim of enhancing students motivation during learning process. Past research has implemented the use of affective text intervention within Emodu application, however, the system was unable to deliver an adaptive and more varied text. This study proposes the utilization of Large Language Model (LLM) based on Llama 3 model as method to generate more varied affective text intervention without relying on existing data, achieved through fine-tuning method, which aims to compare the capabilities of the base model and the model that has undergone the process. This approach leverages Llama 3 ability to understand the semantic structure of sentences and generate sentences with similar context to the existing data. The quality of the generated sentences showed an average improvement of 6,8% over the base model in ROUGE metrics, and 3,6% higher in BERTScore metrics. These findings highlight the significant potential usage of LLMs, particularly Llama 3, within the domain of Affective Text-generation (ATG) and pave the way for advancements in Artificial Intelligence (AI) within the field of affective computing.

Keywords: *Affective Text Intervention, Affective Computing, Affective Text-generation, Large Language Model (LLM) and Llama 3*

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