

Aslan Abdinabiev

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SUMMARY

PhD candidate building tools that automatically find and fix bugs in code using large language models. My work has improved automated repair success rates by 37% over existing methods. Currently in the thesis stage of my PhD (expected 2027). Open to part-time research, engineering, or development positions, with interest in transitioning to full-time after graduation.

EDUCATION

University of Seoul <i>PhD in Software Engineering</i> <ul style="list-style-type: none">Research focus: Automated Program Repair using Large Language Models	Seoul, Korea 2024 – Present
University of Seoul <i>M.Sc. in Software Engineering</i>	Seoul, Korea 2022 – 2024
National University of Uzbekistan <i>B.Sc. in Information Technology</i>	Tashkent, Uzbekistan 2016 – 2020

RESEARCH EXPERIENCE

Student Researcher <i>Software Engineering Laboratory, University of Seoul</i> <ul style="list-style-type: none">Built automated program repair tools using both commercial (GPT-4o) and open-source LLMs (CodeBERT, CodeLlama, Qwen 2.5 32B) with RAG and static analysisDesigned agent-based architecture with dynamic context management, fixing 357 Java and 87 Python bugs across Defects4J and SWE-Bench LiteDeveloped classification-based fault localization achieving 74.6% file-path accuracy on SWE-Bench LitePublished papers at JIPS journal, KCSE, and other conferences; co-authored paper in IEEE Access (Google Scholar)	2022 – Present Seoul, Korea
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PROJECTS

Agent-Based APR with Dynamic Context <i>Python, Java, GPT-4o, CodeBERT, FAISS</i> GitHub <ul style="list-style-type: none">Multi-agent system (Context Updater, Generator, Overfitting Detector) with dynamic context pool and six static analysis tools for iterative patch refinementFixed 357 bugs on Defects4J and 87 on SWE-Bench Lite, outperforming SRepair (+7.5%), ChatRepair, and ThinkRepair
MCRepair++: Multi-Chunk Program Repair <i>Python, Java, PyTorch, CodeBERT</i> GitHub <ul style="list-style-type: none">Fine-tuned CodeBERT with buggy block preprocessing and proportional patch combination for multi-chunk bugsFixed 79 bugs (31 multi-chunk) on Defects4J, improving 21–342% over TBar, CURE, and CoCoNut
Classification-Based Fault Localization <i>Python, GPT-4o, AST Parsing</i> GitHub <ul style="list-style-type: none">Classifies issue descriptions into Full/Partial/Hint categories and routes to tailored symbol-level localization strategies74.6% file-path and 52.3% symbol-level accuracy on SWE-Bench Lite, outperforming Agentless and AutoCodeRover

TECHNICAL SKILLS

AI/ML: CodeBERT, GPT-3/4, CodeLlama, Qwen 2.5 32B, fine-tuning, prompt engineering, RAG, embedding-based retrieval
Languages: Python, Java, SQL, Bash, C#
Frameworks & Libraries: PyTorch, TensorFlow, Hugging Face Transformers, Scikit-learn, FAISS
Tools: Git, Docker, Linux, OpenAI API, JavaParser, Defects4J, SWE-Bench

LANGUAGES

English (Advanced, B2–C1) | Korean (Elementary, A2) | Russian (Intermediate, B1) | Uzbek (Native)