Phase One

Data Collection and Preprocessing

PR>=1K

Review>=50

Github

Acquisition and Screening

Git traversal

Tree-sitter parsing

Context Reconstruction

Final Data

Semantic Filtering

Diff

old

new

Diff Patches Processing

Phase Two

Data Augmentation and Construction towards Maximum Entropy

Data Augmentation

Enhanced Prompts

Using enhancement prompts

Maximum Entropy Dataset Construction

$$\{a_{i,1}, a_{i,2}, \ldots, a_{i,n}\} \overset{\text{i.i.d.}}{\sim} P_{\text{model}}(a_{i,n} \mid q_i)$$

Phase Three

Knowledge infusion through Maximum Entropy fine-tuning

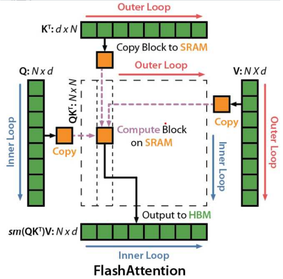
Basic Model

Qwen2.5-14B

Training Method: Maximum Entropy Fine-tuning

$$\mathcal{L}_{MEF}(x) = \sum_{i=1}^{n} logP(\{x_{i,1}, x_{i,2}, \ldots, x_{i,n}\}|x_{<i})$$

Technical Optimizations



DeepSpeed Zero3

Flash Attention

Full Fine_Tuning

Hardware:8×NVIDIA H800 80GB

Phase Four

Activating long CoT reasoning in ACR

Long CoT Prompt Design

Mimics expert reviewer workflow

Role Prompt

Think(Human Behavior Simulation)

- **Comprehensive Analysis**
- **ProblemLocalization**
- **Structured Feedback:**

Output Format

<location> <comment>