

Plan A: Compiler-feedback Learning Roadmap

Goal: TypeBERT (TypeScript) → tsc → type-check

1. Data Collection

- tsc
- (a) (b) / (c) API (d)
- → tsc → tsc

2. Data Preprocessing

- consumer tsc any
- tsc (i) Localizer (ii) Top-k Reranker

3. Model Architecture: 3 Models

M1. Base Type Generator

- TypeBERT/CodeBERT API / export Top-k
- M1 M2/M3

M2. Error Localizer

- tsc error code, file, range, message consumer AST/
- .d.ts Top-M
- ≠
- v0=AST → v1=

M3. Error-aware Reranker

- Localizer +
- Top-k
- Δerrors / pairwise ranking

4. Evaluation

- consumer.d.ts tsc → E0
- Localizer D 1 → tsc → E1
- $\Delta = |E1| - |E0|$
- (context, error-features, candidateA, candidateB) reranker/localizer
- tsc

5. RQ

6. [REDACTED]

[REDACTED]	[REDACTED]([REDACTED])	[REDACTED]/[REDACTED]	[REDACTED]
0. [REDACTED]	1 [REDACTED]	[REDACTED]library/consumer[REDACTED]tsconfig/lock[REDACTED]tsc[REDACTED]JSON[REDACTED]	[REDACTED]
1. Baseline	1 [REDACTED]	B0/B1 [REDACTED] / [REDACTED] / [REDACTED] /any [REDACTED]	tsc [REDACTED]
2. Localizer v0	1 [REDACTED]	AST [REDACTED] Top-M [REDACTED] P1 [REDACTED]	[REDACTED]
3. [REDACTED] → [REDACTED]		[REDACTED] JSONL [REDACTED] pairwise [REDACTED]	[REDACTED]
4. Reranker v0 [REDACTED] L [REDACTED]		[REDACTED] / [REDACTED] P2/P3 [REDACTED]	M4 32GB [REDACTED]
5. Localizer v1 [REDACTED]		v0 [REDACTED] RQ2 [REDACTED]	[REDACTED]
6. Reranker v1 [REDACTED]		[REDACTED] Transformer/LoRA [REDACTED]	MPS [REDACTED] v0 [REDACTED]
7. [REDACTED]	1 [REDACTED]	[REDACTED]	[REDACTED]

7. [REDACTED]Apple M4 / 32GB[REDACTED]

- [REDACTED]tsc[REDACTED]A[REDACTED]
- [REDACTED]/LightGBM[REDACTED]reranking[REDACTED]CPU/MPS[REDACTED]
- Transformer[REDACTED]reranker[REDACTED]+LoRA[REDACTED]
- tsc[REDACTED]: [REDACTED]consumer[REDACTED]

8. [REDACTED]

- Top-k[REDACTED]: Base[REDACTED]k[REDACTED]/[REDACTED]
- [REDACTED]module[REDACTED]/exports[REDACTED]: [REDACTED]
- [REDACTED]: consumer[REDACTED]
- [REDACTED]: v0[REDACTED]Localizer + [REDACTED]Reranker[REDACTED]v1[REDACTED]

9. deepresearch[REDACTED]

- [REDACTED]
- [REDACTED]/[REDACTED]B[REDACTED]
- any/unknown[REDACTED]C[REDACTED]
- TypeScript[REDACTED]module resolution/exports[REDACTED]

[REDACTED]: [REDACTED]2[REDACTED]

- Baseline[REDACTED]B0/B1[REDACTED]any[REDACTED]3[REDACTED]/[REDACTED]/API[REDACTED]
[REDACTED]
- Localizer v0 [REDACTED]
- [REDACTED]JSONL[REDACTED]reranker[REDACTED]

[REDACTED]: 2026-01-18[REDACTED]Asia/Tokyo[REDACTED]