

(a)

Source Code

```
#include "macros.h"
#define NC 4
#define COARSE_GENERAL
__kernel void
ComputeQ_GPU(int numK, int kGlobalIndex, __global float* x, __global float* y, __global float*
z,
            __global float* Qr, __global float* Qi, __global struct kValues* ck) {
    float sX[NC] // ...
```

(b)

Source Rewriter

```
__kernel void A(int a, int b, __global float* c, __global float* d, __global float* e, __global
float* f, __global float* g, __global float4* h) {
    float i[4];
    float j[4]; // ...
```

(c)

Language Model

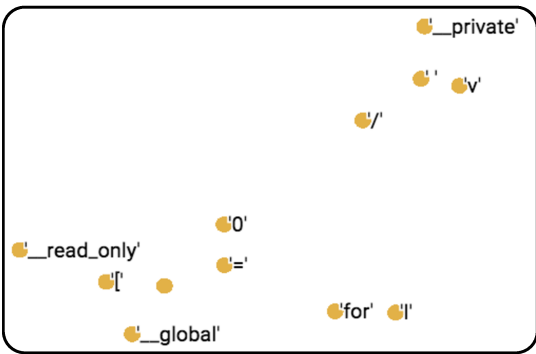
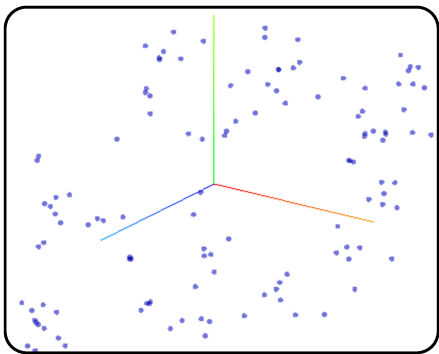
Sequence Encoder

Encoded sequence (first 80 tokens)



(d)

Embedding

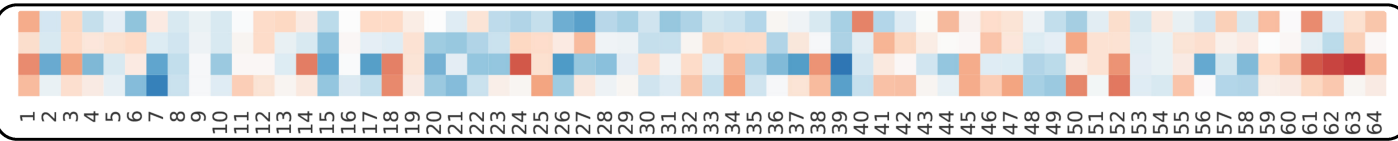


Learned embeddings (PCA projections)

(e)

LSTM

AMD HD 5900
AMD Tahiti 7970
NVIDIA GTX 480
NVIDIA Tesla K20c



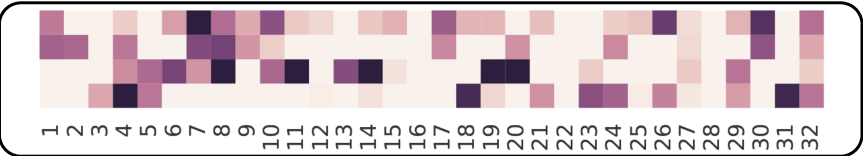
(f)

Heuristic Model

Batch Normalisation

Dense NN

AMD HD 5900
AMD Tahiti 7970
NVIDIA GTX 480
NVIDIA Tesla K20c



(g)

Predicted Optimisation

