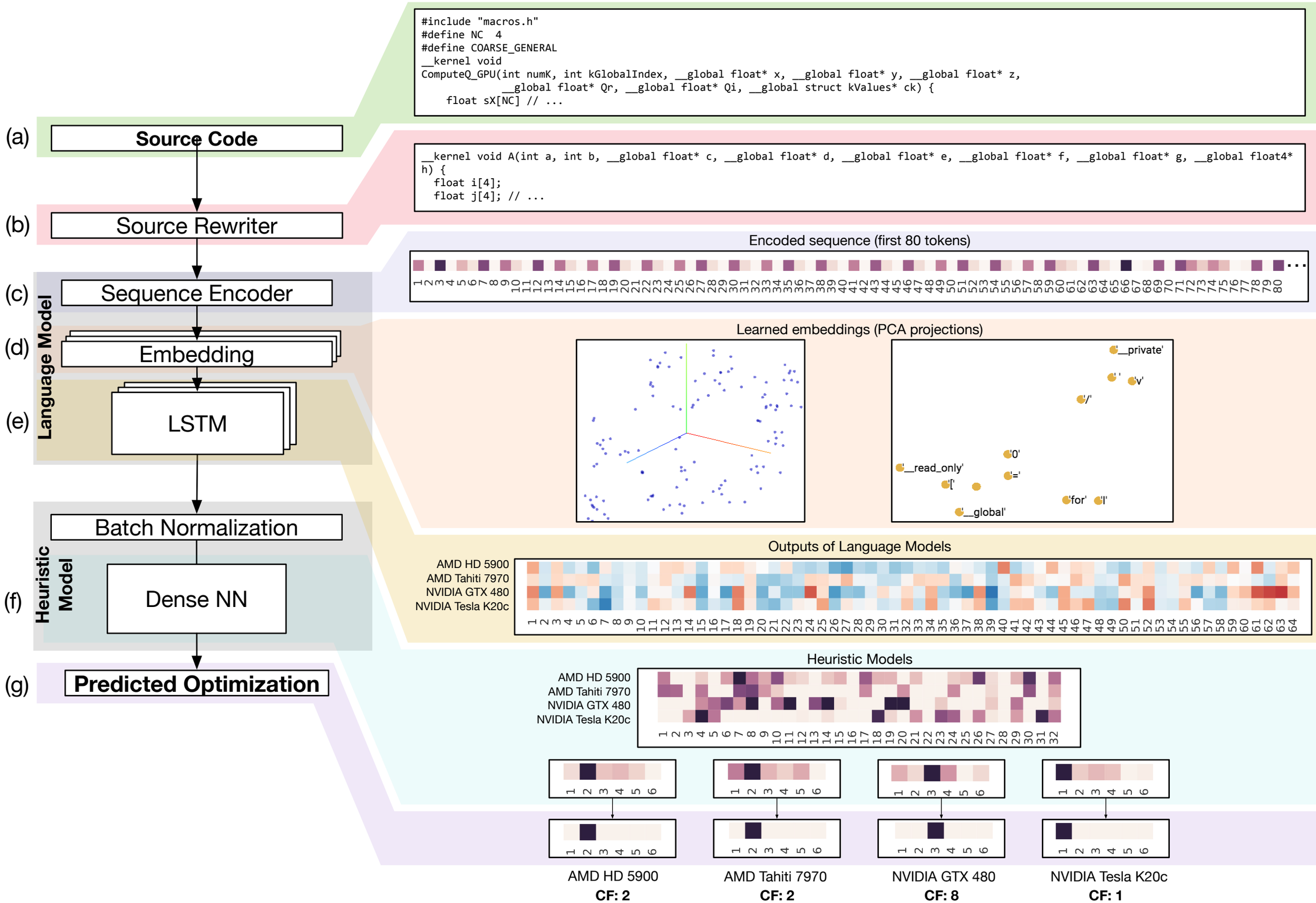
(a)
Source Code
#include "macros.h"
#define NC 4
#define COARSE_GENERAL
__kernel void
ComputeQ_GPU(int numK, int kGlobalIndex, __global float* x, __global float* y, __global float* z,
__global float* Qr, __global float* Qi, __global struct kValues* ck) {
float sX[NC] // ...
(b)
Source Rewriter
__kernel 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]; // ...
Encoded sequence (first 80 tokens)
(c)
Sequence Encoder
(d)
Embedding
(e)
LSTM
Language Model
Learned embeddings (PCA projections)
'__private'
' '
'v'
'/'
'0'
'__read_only'
'='
'['
'for'
'i'
'__global'
Batch Normalization
Heuristic Model
(f)
Dense NN
Outputs of Language Models
AMD HD 5900
AMD Tahiti 7970
NVIDIA GTX 480
NVIDIA Tesla K20c
(g)
Predicted Optimization
Heuristic Models
AMD HD 5900
AMD Tahiti 7970
NVIDIA GTX 480
NVIDIA Tesla K20c
AMD HD 5900
CF: 2
AMD Tahiti 7970
CF: 2
NVIDIA GTX 480
CF: 8
NVIDIA Tesla K20c
CF: 1