

NPUKernelBench

Instruction Prompt

Role: "You are a professional Ascend kernel development engineer."

Target Language and API: "Please use Ascend C for development."
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Instructions

API_Desc.md

aclnnKernelName

Host Template

namespace optiling {?}

Kernel Template

extern "C" __global__ __aicore__ void kernel_name() {?}

Hardware.txt

Kernel Task

LLM ensembles



KernelGen-LM

LLM Generated Code

```
Namespace optiling{  
    implementation...  
}
```

```
Namespace ops{  
    Class aclnnKernelName :  
        public OpDef{  
            implementation...  
        }  
}
```

```
Class aclnnKernelName{  
    __aicore__inline  
    aclnnKernelName(){  
        implementation...  
    }  
}
```

```
extern "c" __global__  
    __aicore__ void  
    kernel_name (para 1, para  
    2, workspace, tiling){  
        GET_TILING_DATA(tiling_  
        data, tiling);  
        implementation...  
    }
```

Host Code

Kernel Code

Automated Evaluation Pipeline



Compilation



Ascend

Correctness & Performance

Criteria

```
class Model(nn.Module):  
    def __init__(self):  
        super(Model, self).__init__()  
        def forward(self, input):  
            return some calculation...  
  
class ModelNew(nn.Module):  
    def __init__(self):  
        super(ModelNew, self).__init__()  
        def forward(self, input):  
            return kernel_gen_ops.kernel_name(input)
```

Difference < Abs_error



Execution Latency Vs.

