

# Multicore Architecture and Parallel Programming

## Assignment on OpenMP Programming

**Due: 17.Oct 23:59**

1. Please write a program in OpenMP, to compute the sum of a vector

$$sum(x) = \sum x_i$$

2. Please implement a function to compute matrix multiplication in OpenMP.

## Reference

<https://computing.llnl.gov/tutorials/openMP>

## Notice

1. Server IP: 202.120.38.28, port: 2016. Username: your name (e.g. for Chinese Students, it's Pinyin of your name). Password: Last four digits of your student id. You can ssh login to work on the server. You can use scp to perform file transfer between your PC and server.
2. You have to write a makefile to compile your code. Sample makefile and OpenMP code has already been dumped at your home directory.
3. Send your final version to TA at [oar.yin@sjtu.edu.cn](mailto:oar.yin@sjtu.edu.cn). The Subject of the email should be "studentID\_name\_hw1" You should archive your source code and makefile with StudentID\_Name\_OpenMP.tar.gz(or any archive file types). Do not include binary file.
4. You are suggested to use template if possible to become generic.
5. It should be a standalone function to perform the computation, i.e., everybody can reuse your function to do the similar job with variable configurations.  
e.g. For the matrix multiplication task, the prototype of the function should be like this:

```
template<typename Type>
int MatrixMultiplication(
    Type *pMatA,
    Type *pMatB,
    Type *pMatC,
    int M,
    int N,
    int K);
```

6. Should you have any questions, please feel free to contact TA at [oar.yin@sjtu.edu.cn](mailto:oar.yin@sjtu.edu.cn).