

VG101 — Introduction to Computer and Programming

Challenge (Gomoku)

Manuel — UM-JI (Summer 2019)

- Improve coding while having fun
- Learn about Artificial Intelligence (AI)
- Rewarded by a bonus on the final grade

In this challenge the goal is to use C or C++ to develop a strong Gomoku AI and compete with other students. Get your code ready and meet on <http://focs.csproject.org/gomoku/>.

Rules

Follow the rules below:

- Check the [about page](#) for sample code;
- Write all the code in C or C++;
- No other language than C and C++ will be accepted;
- In a group no more than one student is allowed to submit a code;

Reward

The reward will be determined as follows.

- Single: up to 2.5 extra marks on the final course grade;
- Team: up to 5 extra marks on the final course grade to be equally shared among the team members;

More specifically the bonus will be calculated as follows. We denote by n is the number of valid participants in the course and r is the rank among the n players. Moreover *valid* participant is defined as having followed all the above rules and having a higher score than the basic AI. Let s be 1 if a group is composed of a single student and 2 otherwise. Then the bonus is determined by the function,

$$B_n(r) = s \cdot \left(2.5 - 2 \frac{\log \frac{r+1}{2}}{\log \frac{n+1}{2}} \right)$$