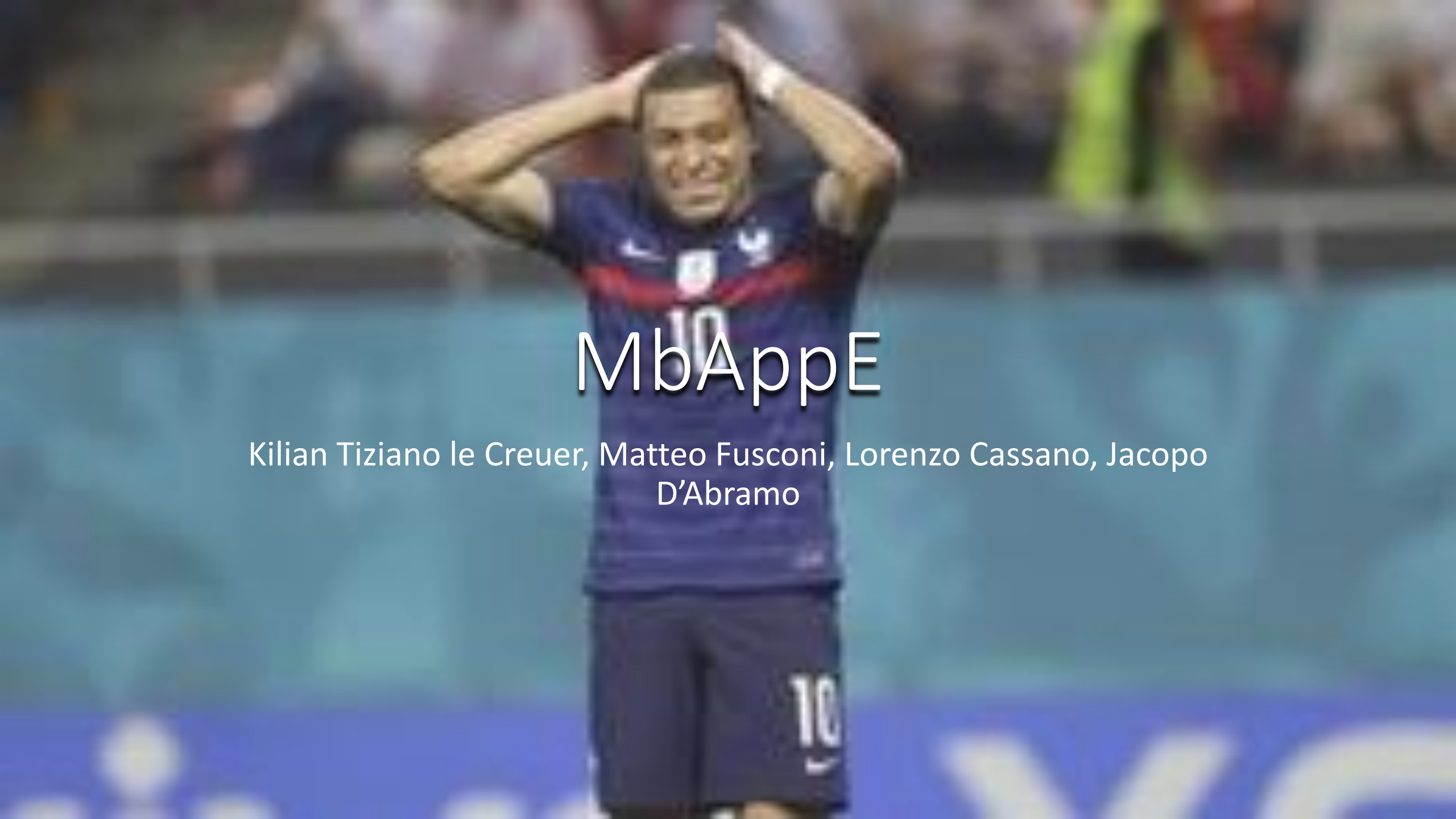

MbAppE

Kilian Tiziano le Creuer, Matteo Fusconi, Lorenzo Cassano, Jacopo D’Abramo

Programming Language: Python 3

PROS

- Machine learning environment
- Simplicity

CONS

- Inefficency

Algorithm Structure

- Written on top of AIMA Library
- MINMAX with ALPHA BETA pruning depth limited with heuristic function.
  - Well known alogrithm for 1v1 games.
- Maximum depth reached: 4 ($O(20^4)$ nodes).

Heuristic functions

- Algebraic sum of two heuristics.
- $h'(board) = h_1(board) + \mathrm{h}_{\mathrm{king}}(board)$
- h_1 is the signed sum of all the checkers in the board, which takes into account also the box position occupied by them.
- h_{king} takes into account the position of the king in the board and its safety.

Conclusions

- Problem with depth:
  - Inefficency of code.
- Time constraint:
  - Using a depth first-based algorithm makes it difficult to fulfill time constraints on the move. (Structure modification).