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————— GIVE US YOUR BEST SHOT —————

◆ Motivations and Goals

- Chose Terran, as they have the least variation in playstyle against different races. Additionally, they are the least “tricky”, and easiest to understand, of the three.
- Create and use a mech based “Siege Expand” strategy / build order. Effective, and safe, against most strategies employed by any race.
- Include specific micro-management logic for our accompanying unit composition.
- Prioritize surviving early game while expending minimal resources to do so.
- Expand quickly to gain, and hold, a resource advantage throughout the game.
- Work towards a strong late game where we can slowly dismantle our opponent.

◆ In the Beginning...

- UAlbertaBot's only successful Terran strategies involved early game rushes.
- Very little Terran specific code. Race unique features still had to be implemented.
- Combat units were sent single file towards the enemy base as soon as they were made. When they inevitably died, it weakened our early game.
- Units would defend mineral lines instead of chokepoints, making them slow to respond to aggression. Often caused fights to occur at unideal positions.
- One SCV would infinitely chase enemy scouts, losing valuable mining time.
- Questionable expansion logic, expanding slowly, linearly, with not enough SCVs.
- SCVs were only capable of repairing buildings. Mechanical units had no way of regaining lost health.

◆ Faster Expansion Timing

- Greedy; attempts to out-expand and out-produce opponents.
- Expand frequently upon entering the mid-game.
- Expansion rate slows down, only expanding late-game if we have abundant minerals.
- 15 SCVs per expansion, with a maximum of ~60 (including combat SCVs).



[Expansion Timings](#)

◆ Anti-Scouting

- Optimized the logic of the *updateScoutDefenseSquad()* method in *CombatCommander*
- Chase the enemy scout out of our mineral line, then return to mining. Focus on collecting resources.
- Early marines deal with scout.
- Additionally, will stop any early game attacks before marines are created.



[SCV Defence](#)

◆ Improved Early Game Defence

- Later natural expansion timing; focus on mech unit production in early game.
- Units will defend top of the ramp until natural expansion has been taken, then move down to protect it.

[Protoss Defence](#)



[Terran Defence](#)



- Each expansion will have it's own defense squad, with twice as many units defending the main base / natural.
- Tanks enter Siege Mode preemptively; able to attack threats immediately.

◆ Attack Coordination

- Wait until we have a minimum amount of each unit type before attacking.
- If we predict we a loss, retreat and resume defence of our expansions until we once again have our desired unit composition.
- When we have an abundance of minerals, attack, even if we predict we could lose.



[Retreating to Attack Another Day](#)

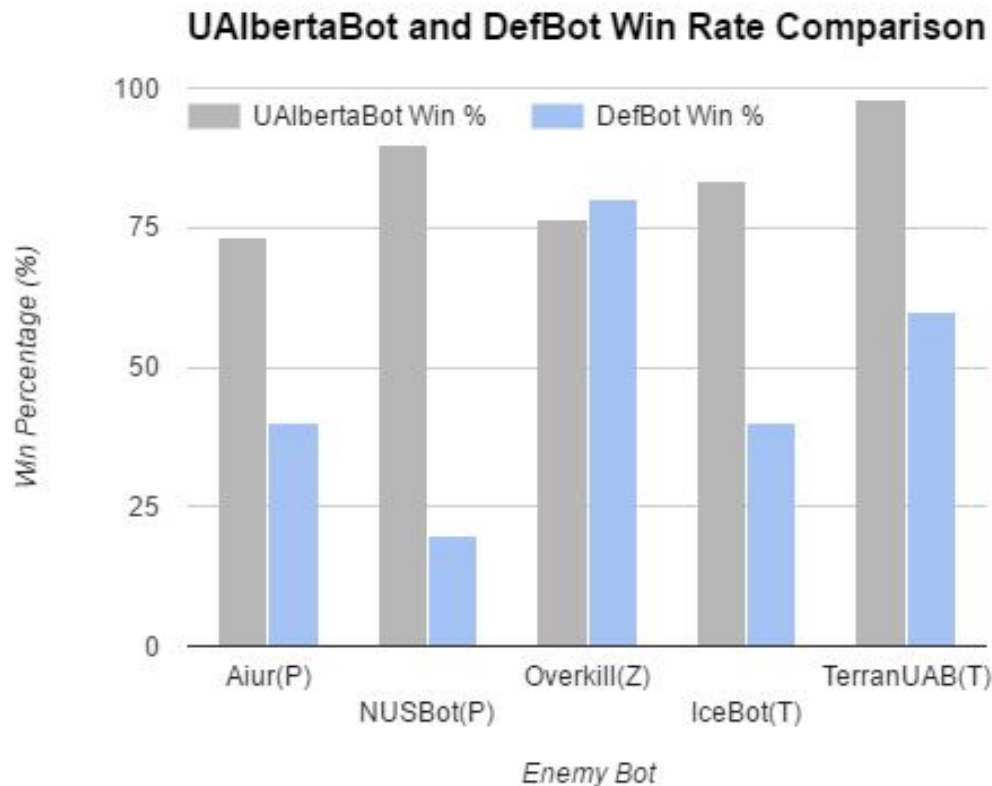
◆ In-Combat Repairs

- SCVs will repair defensive units stationed at expansions.
- When initializing an attack, up to five SCVs join to repair units in and out of battle.



◆ Statistical Evidence

- Data from UAlbertaBot was taken using the “Random” race.
- NUSBot used exclusively early game rush strategies.
- TerranUAB used a similar strategy and unit composition to our own.



◆ Advantages

- Strong unit composition, effective against all races and most strategies.
- Attempts to be greedy, and out-produce opponents. Strong late game.
- Usually win attacks we commit to, otherwise retreating with minimal losses.
- Mech units in the field are capable of being repaired.
- Intelligent anti-scouting.

[Moving Ramp Defence](#)



[Attacking Protoss](#)



◆ Disadvantages

- Relatively vulnerable to early game attacks.
- Weakness to invisible units, currently no reliable detection.
- Program can “hitch”, causing the AI to completely stop working.

◆ Future Goals

- Wall off our ramp with our second Command Center, float it to Natural Expansion.
- Implement Siege Tank “leapfrog” AI.
- Leave more gaps between our units to facilitate movement, and not block ramps.
- Group up units more before initializing an attack.
- Finish buildings if the original SCV building them dies.
- Move Science Vessels with combat units; keep it and SCVs behind the tank line.
- Investigate “hitching” problem.

Any Questions?



[Run SCV Run!](#)