

# COMBAT ROBOTS

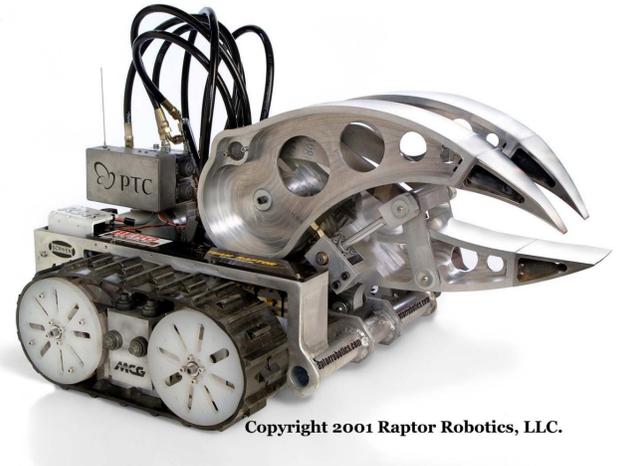
In 2000, the TV show *BattleBots* began airing on United States television networks. Centered on a tournament in which radio-operated “robots” with weaponry competed against each other to win by damaging or destroying the opponent, the TV show proved immensely popular and spawned multiple spinoffs in the U.S., Canada, the United Kingdom, and Australia. In 2002, the show ended, but the hobby of fighting robots continues around the world, with builder-hosted tournaments being common.

As a team, MIT competed in the actual Battlebots tournament and in minor tournaments after the televised seasons ended. With the end of the TV show, smaller classes of robots which were easier and less expensive to build quickly became popular. All MIT combat robots

today are of the smaller 30 lb (12kg), 12 lb (5.5 kg), 3 lb (1.3 kg) and 1 lb (0.4 kg) classes. They feature a fairly diverse range of weaponry and tactics, and were all designed and built by students using resources and equipment available on campus.



MIT's General Gau, a Lightweight (60lb, 30kg)



A Superheavyweight 340 lb (155 kg) BattleBots entry, “Tripulta Raptor”



**Pop Quiz**, a 1 lb class robot with a horizontal spinning titanium impact bar



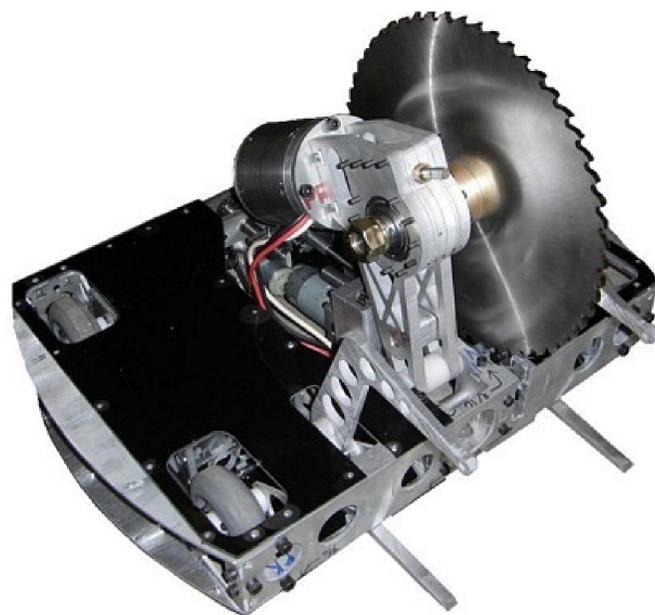
**Nuclear Kitten 5** is a 3 lb class robot with a vertical spinning toothed disc



**Test Bot** is a 12 lb class robot with an electric lifting arm using a 4-bar linkage



30 lb class robot **Überclocker Remix** uses a unique double-actuated lifting fork to both clamp down and lift opponents for total control.



30 lb class robot **Cold Arbor** uses a very slow but high torque saw in combination with a set of clamping claws to latch onto opponents and damage them.

Combat robots are an effective method of teaching robustness in mechanical and electronic design, since they must by necessity survive high impacts and shocks. Loading can be from unexpected directions and parts may fail in nonintuitive ways. The competition factor drives students to create better designs to overcome their opponents by studying their shortcomings. Tournaments are fast-paced environments with time-limited repair and recharging intervals, where team communication and organization is essential.