Intel Corporation

Intel is inside amazing computing experiences: Even robot cars.

When engineers at Stanford wanted to build the most advanced robot car to compete in the DARPA Urban Grand Challenge they chose Intel® Core™2 multi-core processors to give them the high-performance and low-power consumption they needed to build one very smart car. Intel is also working with the Stanford Racing Team to develop software elements to allow the robot vehicle to identify and keep track of other vehicles.

In 2005, Intel worked with Stanford on "Stanley," the robot car that won the DARPA Grand Challenge that year. This past champion was powered by multiple processor blades equipped with Intel processors. Intel is once again proud to be a sponsor of the new robot car from Stanford. The new car, dubbed "Junior" will be updated with Intel's latest technologies.

On-board the new Stanford robot car: blade computers with Intel Core2 Duo processors and rack-mountable systems with Intel Core2 Quad processors for the heavy number crunching of sensor data to pilot the car.

Intel Core2 Duo: High-performance with low power consumption

Unlike Stanley, which only needed to deal with static objects in front of it, Junior must be aware of fast-moving objects all around it, since it will be driving on roads in an urban setting. Junior's sensors are more sophisticated and collect much more data than its predecessor. Using Intel® Core 2 processors, Junior has a "brain" that is about four times more powerful than Stanley's.

Intel Core2 Duo and Intel Core2 Quad processors feature Intel® Core™ microarchitecture, a revolutionary blueprint that takes these Intel processors and products to extraordinary levels of performance and power efficiency. Intel multi-core processors feature two or four computing engines on each chip, which allows for high-levels of multi-tasking performance. Whether it's a robot car or your new laptop, today's computers need to be able to run many programs at once. Intel's Core2 multi-core processors were designed to do just that.

And even with 40% greater processing performance than our previous generations of processors, today's Intel Core2 Duo processors can draw significantly less power. Reduced power consumption means batteries last longer and computers need less hardware to keep them cool. By keeping the power consumption low in our processors,

the Stanford project's car was able to carry more computers, making it smarter.

Intel software technologies
Intel is helping the Stanford Racing Team develop software to allow Junior to identify and keep track of other vehicles and potentially hazardous objects in its environment. The software lets Junior interpret sensor data to determine the location and velocity of anything nearby - information necessary to safely navigate and adapt to a changing urban environment. The team is also using Intel software compilers and libraries to fine tune Junior's software programs and maximize his performance.

It takes a lot of data to interpret the road ahead, but the Intel Core2 Duo and Quad core processors on-board have the performance to quickly make decisions about the road and keep the car moving towards its goals.

What does this mean to you?
Intel Core2 Duo processors can be found in amazing computers from robot cars, to notebook computers and entertainment PCs. Look for the Intel logo when choosing your next computer. You'll be able to do more and experience more and multiply everything you do. For more information, you can visit us on the web at: www.intel.com .

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