About Cruden:
Cruden is the world’s leading designer and manufacturer of motion-based driving and racing simulators. Its professional simulation equipment is trusted by engineers working at the highest levels of international motorsport, including Formula 1, as well as automotive manufacturers, universities and research institutions. Cruden provides the most realistic and accurate technology available, to help efficiently improve road and race car and driver development with unlimited testing in less time, for less money.

Cruden B.V.’s heritage is in professional flight, marine and driving simulator technology. Originating from Fokker Aircraft Company, in 2003, the company took flight simulation know-how and developed a racing simulator that combined a motion base with a detailed dynamic vehicle model, excellent motion-cueing software and professional image generation. The resulting simulator proved to be very realistic.

Since 2005, the company has been successful in securing projects in the motorsport, automotive, research and university markets – where it is a trusted supplier to some Formula 1 teams – thereby gaining an excellent reputation in the vehicle simulator market place. Additionally, Cruden develops rides and experiences for the entertainment & attractions industries, marketed by its Cesys subsidiary. The company’s headquarters are in Amsterdam.

Project background:
In the current Cruden simulator software spectrum, we have two types of cars. One car type uses a Simulink-based vehicle model, where the user can modify both the parameters and the model itself. This type of car can only be driven by a human, there is no ’auto-pilot’.

The other car type uses an internal, hardcoded vehicle model, where the user can modify the vehicle parameters, but not the model itself. This car could also be driven by a computer instead of a human, using a very rudimentary controller that attempts to drive the car based on a set of target locations and velocities.

Assignment:
Cruden is looking for a system which is capable of driving any type of car automatically using a Neural Networks approach. The first step would be to create a simple autopilot for the Simulink-based cars, such that these can drive automated as well. The main work is then to create a Neural Network based realtime car controller that self-learns how to drive any car on any surface. This will start with driving on a pre-recorded set of target points, but will expand into object/competitor avoidance, racing tactics and possibly driving without knowledge of a pre-recorded best line.

Although the project schedule is to be discussed, we would like the project to run for six to twelve months, including the writing of the report/thesis.

Cruden offers a monthly allowance of 300 euro for internships and thesis projects.

For more information about Cruden, please refer to www.cruden.com.
Applications, including motivation and resume, should be sent to jobs@cruden.com.