

Time to tear up the track with an autonomous drift car

Futurice is going to the races, and you are invited!

What was initially a friendly, company-internal hobby project has gone completely out of control and has now grown into a full-scale battle. The aim of this project is to make and train an autonomous car and join the competition.

You will make a fast 4WD 1:10 autonomous car. The starting point for your machine learning task is to create a fork of the Donkey Car project - <http://www.donkeycar.com/> - and then train it to drive autonomously around a track using computer vision. We are not talking about donkeys - think rally rules. This will be a scrappy, blazingly fast Finnish drift car.

Futurice will provide you with a Tamiya TT-02 car chassis including the motor and steering. Before the car can go onto the track, you will need to assemble and attach the provided electronics for autonomous operation using the camera (Raspberry Pi etc). There will be a project kick-off at the beginning of June in Särkänniemi (Tampere), where you are invited to watch the first live race. The project will be concluded with another race in Helsinki against other teams from the global Futurice offices, probably on the Aalto Campus.

The contact person representing Futurice will be Wilfried Bock. Futurice's mentoring capability includes know-how in the fields of software development, 3D design and prototyping, electrical engineering, and tinkering.

Team skills needed:

The hardest part of this project will be **software development** and **machine learning** (Python); Getting the software stack set-up, gathering training data, and then optimizing the process. Further knowledge that would be nice-to-have are some basic electronics for assembly and 3D printing.

Optional challenges:

- Publish your improvements as open-source for your personal portfolios
- 3D print the chassis of the car yourself using <https://driftcar.pelablocks.org/>
- Design and print your own car body (see example: <https://bit.ly/2TNPLPZ>)
- Port from Raspberry Pi to Nvidia Jetson Nano
- Beat [Markku.ai](#), the Futurice Tampere race team! (They deserve it)

Still need motivation? Watch this video: <https://vimeo.com/317980605>

Keywords: Machine learning, computer vision, electronics, 3D printing, competition, drift cars, glory

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