Internship/Master Thesis: Development of a mechatronic device/system for innovative mouth health detection

https://www.icdrachten.nl/vacatures/internship-master-thesis-development-of-a-mechatronic-device-system-for-innovative-mouth-health-detection/

Bedrijf: Philips
Locatie: Drachten
Opleidingsniveau: HBO/ WO
Periode: Onbepaalde tijd
Stage: Ja

Are you the enthusiastic, talented graduate(s) Biomedical engineering and/or Mechatronics engineering
we’re looking for?

You will be joining the Innovation Team Oral HealthCare R&D department at Philips

Drachten. An impactful
multi-disciplinary team of experienced and passionate professionals, that works with internal and external
teams from all over the globe. You get the opportunity to work on an innovative method and device for mouth
health detection to improve the consumer's mouth health.

Problem description of assignment
Develop a proof of concept in several stages for a product to improve the consumer's mouth health with an
innovative mouth health detection method.

Main subjects of the assignment:
 Biomedical engineering oriented:
o Proof the feasibility, capabilities, and limitations of the detection method, both in vitro as in
vivo.
o Determine the possible and beneficial user interactions with a device/system containing such
a detection system.
o Determine the system specifications for a device/system comprising the detection and interaction methods defined.
o Proof the user benefits of such a system and/or device

 Mechatronics oriented:
o Define design requirements, specifications and constraints for the mechatronic device.
o Design and build test devices for both in vitro and in vivo tests.
o Design and build final prototype for the device/system to be developed as a product.
o Those designs will require the application of:
Light (LEDs), light sensor systems, optics, CAD design, 3D model making, microcontrollers, electronics, signal processing algorithms for IMU and optical sensors, like autocorrelation and
synchronous detection. Prototype building possibly with e.g. Python, embedded python, C/C++, Arduino, etc.

The exact assignment(s) can be further discussed and defined by the students themselves in collaboration with

our team. You are in the lead!
Please note that the subject is highly confidential and requires signing of NDAs. Presentations might need to be
adapted in case they are required to be presented to a general audience.

We are looking for:
One or two Master graduation students (40 - 45 ECTS) who are pursuing Biomedical engineering and Mechanical
engineering or Robotics.

To succeed in this role, you have the following skills and experience:
 Affinity with the biomedical and consumer field.
 Professional skills in English (written and verbal).
 Team player, passionate about results and people.
 Hands on mentality and result driven.
 Likes to do research, execute experiments and make prototypes.
 A solid background in the above-mentioned subjects.
 Students open to learn a lot of new competences, like technical subjects, research, development,
consumer research, international cooperation in a large-scale company etc.
 Able to work mainly on site (Drachten)

You will be part of:
In Drachten you'll find one of the largest innovation sites of Philips globally. With over 2000 colleagues from
over 35 different nationalities, it's an inspiring environment for you as a young talented intern. At Philips
Drachten some of the best consumer product developers in the world work together to create innovative
products with excellent end-user experience.

Our offer
Philips Drachten could be the start of your promising career, with lots of opportunities to develop yourself
locally or internationally in different sectors of our company. At Philips you work for an employer whose
activities have a major positive impact on people all over the world. You also get:
 Opportunity to strengthen your capabilities and knowledge.

 Dedicated substantial support and guidance from an experienced supervisor and support from several
professionals and departments.
 You will receive an internship allowance.
 Within Philips you get the opportunity to expand your professional network.

Contact
For questions about the requirements of your university for external graduation assignments, contact your
university supervisor.

After approval from your university supervisor, you can contact Philips for further questions regarding the
procedure or application:

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When applying, your CV should include a section on your ambition, as you see it now, for at least the coming
3 -5 years.