

Graduation Opportunity

Develop the Smart Safety Shoe of the Future!

Part 3



Our story

The Netherlands excels at logistics, construction and transport. These industries are growing fast! A huge number of people work in these sectors. Working in warehouses, on construction sites or with heavy equipment involves risks. Safety shoes are required in many workplaces and 1.5 million pairs of safety shoes are sold in The Netherlands each year, with Allshoes Safety Footwear as market leader. With our own brands such as Redbrick and Mr. Miles and exclusive distribution rights for Grisport and Reebok Work, our company owes its success to our courageous decision to introduce revolutionary safety footwear that reflects the latest fashion and sports trends into a conventional market.

Our aim

To create a "smart" safety shoe that detects and alerts the wearer to danger in high-risk situations. In an SPD graduation project at TU Delft, a strategic concept was developed in which a smart safety shoe measures the leading and lagging indicators with regard to manual handling. Following this concept, an IPD graduation project resulted in a tangible prototype equipped with pressure sensors in its insole. With this prototype, it was shown in a small-scale experiment that it was possible to deploy machine learning in order to detect several harmful postures in one subject. Detecting such postures can open up the way to support prevention of work-related disorders in the long run. This graduation opportunity is the third and

closing part of the Safety Shoe triptych as we are in the final stage of the project.

What will be your task?

In this final stage we want to validate our current knowledge and findings by putting it into practice by scaling up the experimental testing of the principles behind the Smart Safety Shoe. It will be your responsibility to design and conduct experiments with multiple subjects in realistic situations and analyze the resulting sensor data, deep-diving into possible implementations of machine learning and/or AI. Furthermore, you will explore possible user interfaces that help end-users to improve the way they handle materials (e.g., through a tactile alert, or using a smartphone app), all whilst seriously taking GDPR measures into account. By conducting all these steps, our ultimate goal is bringing the Smart Safety Shoe to market. Are you up for this challenge?!

Who are we looking for?

Are you the one who wants to bring the Smart Safety Shoe to life and who wants to drive change with us? Then you are the person we are looking for! We are looking for an IDP student (or possibly a DFI student) who is able to successfully perform the research steps described above, all whilst taking the user perspective into consideration. You are willing to explore the potential of machine learning, AI, and related cutting-edge technologies, and meaningfully incorporate these into your research and design. You do not hesitate to ask for information or

assistance: during the project our colleagues will be there to offer helpful insights and advice.

What do we offer?

During this graduation, you can make use of a great workplace at the heart of the land of safety shoes in our brand-new office in Amsterdam, whereas it is also possible for you to work remotely. Allshoes has an informal organizational culture and has short lines of communication. There will be a budget available for you to conduct your research, a graduation allowance and your travel expenses will be reimbursed. Lastly, the Safety Shoe project is conducted in association with the TUDelft Fieldlab Upps. Following up on the previous graduation project, a supervisory team has already been put in place for this project. Wilfred van der Vegte from the Knowledge & Intelligence Design section is the envisaged chair, and Anton Jellema from the section Applied Ergonomics and Design and Fieldlab UPPS is the envisaged mentor. They can offer support on machine learning and related technologies on one hand, and ergonomics, user research and user interaction on the other.

Will you be the one finalizing the last stage in the development of the Smart Safety Shoe?

If you're interested, please contact Jan.Arts@allshoes.eu

Allshoes
safety footwear