INTRODUCTION

Stichting StudyTour Industria (SSTI) annually organizes the International Research Project. The International Research Project consists of two parts: the research projects in the Netherlands and the study tour. The research projects will be conducted prior to the study tour and are based on a predetermined theme. After finishing these projects the study tour takes place. The study tour is organized around the same predetermined theme, during the tour companies and universities in the country of destination will be visited.

The International Research project (IRP) is an initiative of students of the department of Industrial Engineering & Innovation Sciences at the Eindhoven University of Technology. Students of the Master programs ‘Operations Management and Logistics’, ‘Innovation Management’, ‘Manufacturing Systems Engineering’ and ‘Business Information Systems’ are allowed to participate. The participants will conduct the research projects mentioned above. For the participants the International Research Project is a great opportunity to apply their academic knowledge within an international business setting. Furthermore IRP provides students the opportunity to gain in-depth knowledge about a subject of research that suits their interests and education. In addition, the IRP enables students to learn about different cultures and to acquire international experience.

The International Research Project 2017 will visit Texas and Mexico. The theme of the International Research Project is Intelligent Automation: Innovation towards a new industrial era. In the next pages of this brochure, you can find additional information about the destination and the theme.

This document provides information for companies that may be interested in collaborating with the International Research Project 2017. In this document the possibilities for collaborating are described. When collaborating with the IRP, you can obtain brand awareness, recruitment opportunities and lucrative promotion for your company. You can reach our participants, 22 enthusiastic master students, directly and a large part of the members of study association Industria, which has over 1300 members, indirectly. On the next pages you find the individual sponsor opportunities, which are described briefly. Afterwards the sponsor packages are shown, composed of 3-5 parts.

If your company has other suggestion for collaboration or want more information about the IRP, please feel free to contact us. Our team will make every effort to ensure a pleasant and fruitful cooperation.

On behalf of the SSTI,
Sebastiaan Keijsers
Financial Manager
International Research Project 2017
“Intelligent Automation is one of the key factors in the fourth industrial revolution”

The fourth industrial revolution is evolving at an incredible pace. The current trend of automation and data exchange in manufacturing technologies includes cyber-physical systems, the Internet of things and cloud computing.

You as young engineers, students and future entrepreneurs are living in an era with numerous possibilities. In addition, these evolutions bring unseen and unprecedented challenges. And it’s not just the industry that faces change.

Society in its broadest sense needs to act and come up with appropriate answers for this paradigm shift.

The 13 Dutch universities launched a joint plan called “Digital Society”. This program should contribute to the National Research Agenda, and is consistent with the VNO-NCW proposal ‘Netherlands Next Level’. It is our duty to make this country leading in the new digital technologies.

This digital society is a catalyst for many research projects at our university. We don’t stand alone in this one; the Brainport region should play a determining role in the decades to come. Digital technologies will be deeply integrated in future systems, products and services, such as in smart industries, smart automotive systems, smart health systems, smart cities, smart energy systems, to name a few. These are all topics of research at our university, where we can build on our unique expertise in materials, high-tech systems, photonics, data science and underpinning disciplines.

In this respect you have chosen wisely. More than likely Intelligent Automation is one of the key factors in this fourth revolution, and the applications are probably countless. Therefore I urge you to take in as much as you can handle. Broaden your horizon and use this research project as a grindstone. The future is yours to shape!

Frank Baaijens
Rector Magnificus
Eindhoven University of Technology
Intelligent Automation
Innovating Towards a New Industrial Era

We are at the brink of the 4th industrial revolution; a transformation of the industry into cyber-physical systems; blurring the lines between the physical, digital and biological spheres. Rapidly developing artificial intelligence technologies enable businesses to use smarter and more integrated automation, and fundamentally change the traditional ways of operating. In the near future, machines will be able to analyze information from other automated parts in the production line and make adjustments to their activities, no longer needing human input and resulting in a production hall that can run autonomously for months without human interference being mandatory.

This implementation of artificial intelligence in business processes, creating smart automated systems where all parts are connected and able to make decisions based on (real-time) information, is called intelligent automation. Through new technologies like Machine Learning or Natural Language Processing, business activities like customer service can now be automated. This will improve the efficiency dramatically as a computer costs much less than an employers’ wage and is available 24/7.

It may seem as if humans are simply being replaced by machines, but the only thing that changes is the role of humans in the production process. Where machines take over some roles and jobs from humans, new jobs, knowledge and skills emerge that have to be filled in order to make this new cyber-physical system work. Humans will be more focused on the programming, calibrating and maintenance of automated processes.

As stressed by Delloite (2015) and Accenture (2016), intelligent automation is not an option, it’s mandatory. It will stretch the boundaries of a company’s ability to innovate and reposition in the market, increasing its competitiveness. The challenge lies in the capability of a company to reorganize its resources and integrate the new technologies into its business process in order to maximize their impact. This is the part our research project will focus on.

“Intelligent automation will enable enterprises to innovate and evolve by increasing their agility, reducing the complexity of systems and operations, accelerating their time to market, and creating the ability to experiment continually with new products and services.”

Accenture, 2016
Impact on different stakeholders

Intelligent automation can be applied to a wide range of industries, as not only actual production halls, but also information analysis can be automated through new technologies like Machine Learning, as is seen in the big data trend. As a result, all stakeholders of a company will be affected by it, changing our ways of working, communicating and reasoning. The four main stakeholders that will experience impact of intelligent automation are employees, consumers, entrepreneurs, and the society.

Employees
As seen before, intelligent automation will introduce new job roles for employees. Their roles will be more focused on programming or installing automated systems, instead of manually controlling it. With new roles and jobs also come new skills, which means the education and training of employees has to be revised. Also, with the introduction of robots and AI into the workforce, we will find situations where machines and humans work alongside one another in production halls, which can be quite dangerous. This calls for new models that make environments and infrastructures that reduce risks on injuries and guarantee employees’ safety.

Consumers
For consumers, the communication between a company and a customer changes. AI platforms like Amelia automate customer service via Speakingbot that is able to answer customers’ questions in more than 20 languages. This will change the communication and relation between customer and company. It is important that automation of this communication does not go at the expense of personal attention for a customer. However, through Intelligent Automation it is also possible to personalize certain products to a customer’s needs in an efficient way. For instance, UBS Group AG, a Swiss bank, uses AI technologies to model individuals’ behavioural patterns and build a profile for each customer showing potential match-ups with different types of health management products.

Entrepreneurs
Through automated analysis of data it is possible for entrepreneurs to make decisions faster and more reliable. Machine Learning technologies are used to discover patterns in the still heavily increasing amount of data that is available to a company nowadays. These patterns are used to make predictions about the market, sales, inventory management and give a manager real-time reliable data to base decisions on.

Society
New technologies bring new opportunities, but also new problems. With computers and machines taking over human tasks, a number of societal problems rise. Will there still be enough jobs for everyone? How reliable are these machines? How much autonomy and decision rights can we assign to Artificial Intelligence? These questions about ethics and safety cannot be neglected and must be addressed now, as we are on the doorstep of a world where man and machine live side to side and thus rules about society and commune have to be made or revisited.

Our research will look into how companies can optimally integrate these new technologies and how all these stakeholders can receive as much benefit from it as possible.

“...companies that will grow and dominate their industries will be those that systematically embrace automation across their organizations, using it to drive the changes to their products, services, and even business models as they continue to transform themselves and their industry.” (Accenture, 2016)
This year the International Research Project will head to Mexico and the USA. The study tour starts with the three major Texan cities: Houston, Austin and Dallas. From Dallas we will travel to Mexico, where technology epicentre Guadalajara will be the first stop, after which metropolis Mexico City will be visited. During the study tour several visits to companies that have a connection to the theme Intelligent Automation will take place. Also several universities will be visited, and a visit to the Dutch embassy in Mexico City has been scheduled.

The goal of the study tour is to explore and document the applications and possibilities of Intelligent Automation in a corporate and academic environment in Mexico and the USA. By discussing the topic with employees of manufacturing plants, company headquarters, universities, and official country representation offices, we want to gain extensive knowledge on Intelligent Automation. Once this knowledge has been obtained, we can use it to complement the research findings of the project we conducted in the Netherlands.
SPONSOR OPPORTUNITIES

Promotion on website € 200,-

The International Research Project has its own website: http://industria.tue.nl/irp. On this website information is placed about the IRP and the progress of the project. Your logo will be visible with a link to a company profile, showing a brief description of your company and a link to your website.

Promotion in IRP magazine € 400,-

After the study tour, a magazine will be created with the results of the research projects in the Netherlands and with travel reports of the trip to Texas and Mexico, completed with theme-related articles. You can place an advertisement of one page in this magazine. The magazine will be delivered to all participating parties in the project and distributed in the faculty of Industrial Engineering, printed approximately 150-200 times.

Promotion on team clothing € 300,-

All 22 participants will receive team clothing. For this option, your company logo will be printed on this sweater. It will be worn already in the Netherlands during team activities or when just walking around on the university. Also these sweater will be worn during the trip on cultural activities for example. Your logo will be visible on this clothing. Printing costs are included in the price.

Direct recruitment via mail € 200,-

An email will be sent to all 22 participating students, containing company information at your choice, such as job opportunities or business courses. Because all students are in the final phase of their studies, it can also be interesting to provide information about writing a thesis at your company.

Participation masterclass € 100,-

In March 2017 a Master class will be organized around this year’s theme: Intelligent Automation. 3 interesting speakers will give a presentation about their contribution to the theme. Because this is an interesting topic for any kind of business, you can join this Master class for € 100,- per participant. Additionally, because of the presence of all participating companies and students, it is also a perfect opportunity for recruitment.

Participation closing activity € 100,-

After the study tour, a to be determined closing activity will take place around September 2017, where the results of the research projects will be presented. All companies that provided a research project and participating students will be invited to join this event for € 100,- per participant. For €400,- a package can be bought to have a stand at the activity, including 2 tickets.

Workshop or lecture € 500,-

A workshop gives you the opportunity to have an interactive session with all students involved in the International Research Project during 2 hours. The realization of this workshop is of your own choice. It is a good opportunity to let the students get to know your company. Note that the company should provide for a location of this activity.

Company visit € 600,-

The company visit is probably the best opportunity to get to know the students, which may be your future employees. The company visit can consist of a presentation, a workshop, a case study or a guided tour. This is the way to let the participating students be aware of your company. The company visit will take approximately 3 hours.

** Note that any logos should be provided by the company. When you need further specifications of the possibilities, please feel free to contact us.
## SPONSOR PACKAGES

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The IRP 2017 is supported by the following people:

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