

## **Elon Musk's Projects – challenges for engineering students**

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**Academic year:** 2017/2018

**Abstract:** Our inspiration was just Elon Musk. Elon Musk is a famous billionaire, entrepreneur, investor, engineer, inventor, visionary, environmentalist, philanthropist ... He forms the history of humanity. Elon is featured in major global companies such as Tesla Motors, SpaceX, PayPal, Solarcity, OpenAI, and Hyperloop. Elon Musk is known for its support and development of eco-innovative technologies that seek to eliminate global warming. This global ecological problem is worrying us. And because of that is our project about Him and His projects. Firstly, we will tell you something about Elon Musk, secondly, we will describe you Tesla Motors which is an American company that specializes in electric vehicles, energy storage and solar panel manufacturing, next, we will show you Space X project, after that, we will illustrate future of SolarCity, the leader in full-service solar power systems for homes and Hyperloop which is concept high speed public transport, and finally, we will look at the list possible challenges for engineering students.

**Key words:** Elon Musk, ,Tesla Motors, inspiration, SpaceX, English, challenge

## **Nuclear power safety**

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**Year of work:** 2018

### **Abstract:**

Nuclear power has been used for electricity production longer than 60 years. Within this period, there were three accidents with greater impacts on human lives and environment. The contribution deals with nuclear power safety and aims at demonstrating its sufficient level. The main reasons caused the three accidents which are listed. Nuclear power is compared with renewable sources that are utilized also for electricity production. Nuclear power is considered the most effective way of electricity production so scientists have been working on enhancing nuclear power safety within the electricity production process. Recently, 4th generation reactor is being developed to assure public that nuclear power is worth using in the future.

**Key words:** Nuclear power, core, residual heat, hydrogen explosions,

## **Implementation of bipedal robot locomotion**

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**Supervisor:** PhDr. Emília Mironovová

**Institute:** UIAM

**Acad. year:** 2017/2018

### **Resumé:**

Aim of this project was to describe solution for potential future implementation of bipedal locomotion. This project presents both, hardware and software side of problem and also recommended implementation workflow. In it's final stage, result should present walking platform for various usage.

### **Key words:**

Bipedal locomotion, Robot, Robotics

**APPLICATION FOR SPECIFIC REGISTER DEVELOPMENT  
IN ENGLISH**

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**Year:** 2018

**Abstract:**

My goals were to make application which might enhance: development of specific register in English, understanding English instructions and to improve complex task solving. As a big fan of games, I applied gaming features to this application, to make learning more interesting for students. With help of various different softwares I managed to create an application which might achieve this goals. Point of the application is to make student more interested about specific register in English. In this application, student as a player should practice his skills in English language by figuring out correct answer to the question in English and then find that answer in little puzzle mini game. During the process of playing player is also running against time, so he could compare his time with grades. On this principle, player could measure his English and complex task solving skills. This way I would like to combine our technological knowledge and our education to make learning more fun.

**Key words:** English, application, development, specific, register

## **Laser welding of Titanium and Ti alloys**

**Vypracoval:** Ema Tomčíková

**Názov vysokej školy:** Slovak University of Technology faculty of Material Science

**Vedúci práce:** Mgr. Gabriela Chmelíková

**Pracovisko:** Mgr. Gabriela Chmelíková

**Rok vypracovania:** 2017/2018

**Abstrakt:** This thesis is focused on laser beam welding of titanium. The thesis is divided into two main areas: theoretical part and practical experiment. Theoretical part is divided to three parts and practical part has four parts. In my research I focused on welding especially on laser welding. I talked about material – Titanium and its alloys then about method used and shown some results with different use of parameters. Finally I used example of practical application.

**Kľúčové slová:** Laser beam, welding, laser device, titanium

## CUSTOMER CENTRIC TOOL

**Vypracovala:** Bc. Nikoleta Valovičová

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**Pracovisko:** Pracovisko jazykov a humanitných vied, MTF STU

**Rok vypracovania:** 2017/2018

**Abstrakt:** The aim of the project was dealing with ineffective process of tickets loading into SAP programme in Henkel Slovakia, s.r.o. Tickets loading consists of repetitive actions, which were did manually. Such repetitive actions might cause limited attention and high error rate. Imperfections were detected by process observation. After observation was proposed process automation. The reason, why automation was proposed as improvement was the fact, that process consists of repetitive actions. Creative team was established and assigned by task to develop an internet robot, which can do work instead of people. As a result, the robot, called Customer Centric Tool, was developed and it has automated the process of tickets loading into SAP programme. The robot was piloted, subsequently implemented and consequently it brought many benefits for Henkel Slovensko, s.r.o., the company, where was the project processed, but also it brought many benefits for me as a student and future employee.

**Key words:** Customer Centric Tool, automation, internet robot, repetitive actions

# **Safety barrel cover**

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**Academic year:** 2017/2018

## **Abstract:**

My goal was invent something, what can protect my gun barrel from water, snow and small motes, when I am on driven hunt. This things can fixed my barrel and beside the shooting can result in destroy my barrel and make me serious injury. This thing has to be easy to set up, without risks does not have no relevant impact on accuracy and can not be so expensive. I invited cylindrical item, simply and easy to set up. It is printed on 3D printer from ABS plastic. Found the right component which is waxed paper. Than I took It in to the shooting range and tasted it there. Using Safety barrel cover has no relevant impact on shooting accuracy. It is easy to set up- just put on the top of gun barrel with waxed paper. This paper prevent barrel from unwanted things. After shot It is need just change for new paper. This item can be using by hunters around the world for safety shooting.

**Key words:** proposal, gun barrel, cover, safety