



**Doru-Stefan**  
Irimescu

**DATE OF BIRTH:**

13/01/1995

## CONTACT

**Nationality:** Romanian

**Gender:** Male



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## WORK EXPERIENCE

**15/09/2020 – CURRENT** – Espoo, Finland

### Autonomous Vehicle Engineer

Sensible 4

Software development for high level collision avoidance systems in the planning and control team.

C++ and Python object-oriented programming for a ROS (Robot Operating System)-based autonomous driving system.

Tools used: C++, Python, ROS, GoogleTest, GitLab.

**01/03/2019 – 01/09/2020**

### University research assistant

Aalto University School of Electrical Engineering, department of Electronics and Nanoengineering

Worked on my master's thesis, entitled "A hardware and software platform for characterization and prototyping of a low-power energy-harvesting SoC". The thesis received Huawei Master's Thesis Award 2020.

Designed a measurement and characterization PCB for a research-grade integrated circuit, using Altium Designer.

Used LabVIEW, together with USRP n210 for receiving and transmitting data from/to the chip.

Developed a Python programming interface for measurement automation and configuration of the IC, using test-driven development with Pytest. Low-level IC configuration achieved with Arduino Due programming in C++.

Designed analog filters and impedance matching networks using Advanced Design System (ADS).

Performed various laboratory tests and measurements, using oscilloscope, vector network analyzer, power supply, multimeter.

My designs helped prof. Kari Halonen's research group to test and characterize their IC designs, as well as create a prototype to showcase the work to project stakeholders.

Espoo, Finland

<https://aaltodoc.aalto.fi/handle/123456789/47153>

**13/01/2020 – 31/03/2020**

### University teaching assistant

Aalto University School of Science, department of Computer Science

Course name: CS-E4800 Artificial Intelligence

Supported the course exercises with various Python programming, troubleshooting and debugging tasks.

My contributions helped ease the professor's workload on the (in-development) course, and strengthened the students' understanding of some of the most popular AI algorithms.

Espoo, Finland

**01/09/2019 – 31/12/2020**

### University teaching assistant

Aalto University School of Electrical Engineering, department of Electrical Engineering and Automat

Course name: ELEC-E8001 Embedded Real-Time Systems

Developed from scratch a set of laboratory exercises that showcase the capabilities of an STM32 ARM Cortex-M4 development board (NUCLEO-F411RE).

This involved various hardware and peripheral interfacing, as well as FreeRTOS application development, done using the STM32CubeIDE environment.

My typical responsibilities were hardware selection and procurement, course development and grading, meeting with students for instructing and troubleshooting, embedded software design.

My work benefited the Electrical Engineering and Automation department by augmenting with practical exercises and hands-on experience a course that is compulsory for the Control, Robotics and Autonomous Systems major, and that had previously been only theory-based.

Espoo, Finland

**01/08/2018 – 31/10/2018**

### **Embedded systems engineer**

Artisense GmbH

Developed, implemented and documented a data acquisition system prototype, from both the hardware and software aspects. The main tasks included Kinetis programming and embedded design software for an FRDM-K66F based inertial measurement unit data acquisition system according to time and data format requirements given by the client. PCB design, order and assembly. Hardware (electronics) prototyping. Software architecture design and documentation.

The main tools and technologies that I had used in this project were: MCUXpresso, FRDM-K66F, Kinetis SDK, SPI, UDP, Lwip, Autodesk Eagle, Processing.

In the end, the user could log into the measurement system, send a timing configuration for data acquisition rate and camera triggering, and receive the data on the PC. My work enabled Artisense to develop a successful prototype for its hardware and data infrastructure.

Munich, Germany

**01/09/2017 – 01/05/2018**

### **Embedded systems trainee, bachelor thesis**

Wärtsilä

Worked on my bachelor thesis, entitled "Absolute position measurement and control for Wärtsilä engine during slow turning".

The main tasks were designing, prototyping and improving a control system using the Matlab/Simulink environment and the Wärtsilä UNIC engine control system for diesel engines.

My thesis work enhances the maintainability of the next generation of diesel engines, as well as make the slow turning process more controllable and documented.

Vaasa, Finland

<https://www.theseus.fi/handle/10024/142890>

**01/05/2016 – 31/08/2017**

### **Embedded systems trainee**

Wärtsilä

I have built a 6 channel power monitoring data acquisition board, the hardware and software design being entirely done by me, using Pads Logic and Layout, Multisim Blue, Orcad Pspice,

C programming for ARM microcontrollers together with the lwip stack and FreeRtos.

My work has been part of the Wärtsilä digitalization endeavor, aiming to improve and ease the automated laboratory engine tests.

I have also carried out various tasks regarding engine control automation systems and electronics, with the purpose of building and improving two demonstrational kits of the Wärtsilä UNIC system.

Vaasa, Finland

**01/04/2014 – 31/08/2015**

### **Software engineering trainee**

Vaasa University of Applied Sciences

Android software development for an embedded systems bachelor thesis entitled 'Smart Lock', using the Java programming language.

My work has helped a graduating student to successfully implement a fully automated, smartphone-controllable door lock as his bachelor thesis.

Vaasa, Finland

**01/05/2013 – 01/06/2013**

### **Software engineering trainee**

Bellegames

I wrote software documentation for a game development startup, using the Java programming language and UML diagrams.

Oulu, Finland

## EDUCATION AND TRAINING

**01/09/2018 – CURRENT** – Finland

### **Master's degree**

Aalto University

Automation and Electrical Engineering

88/120 ECTS

GPA: 4.71

EQF level 7

**01/08/2014 – 20/04/2018** – Vaasa, Finland

### **Bachelor of engineering, Information Technology**

Vaasa University of Applied Sciences

Information technology degree with focus on embedded systems

GPA:4.76

- Electronics design
- Software engineering
- Embedded software design
- Telecommunications
- Advanced courses in Mathematics

- Basics of control engineering

Optional master level courses from Vaasa University

GPA:5.0/5.0

- Computer Architectures
- Probability and Statistics
- Digital Signal Processors
- Numerical Methods

EQF level 6

**28/08/2013 – 15/05/2014 – Oulu, Finland**

## **Bachelor of engineering, Information Technology**

Oulu University of Applied Sciences

Information technology degree with focus on software engineering and web development

GPA:4.16/5.0

- Software engineering
- Databases
- Java programming
- Web technologies

EQF level 6

**15/09/2009 – 15/07/2013 – Iasi, Romania**

## **Baccalaureate**

Colegiul Costache Negruzzi

Matriculation exam: Physics 10.0/10.0 Mathematics 9.50/10.0 Romanian 7.85/10.0

EQF level 4

## LANGUAGE SKILLS

**MOTHER TONGUE(S):** Romanian

**OTHER LANGUAGE(S):**

### **English**

**Listening**  
C1

**Reading**  
C1

**Spoken  
production**  
C1

**Spoken  
interaction**  
C1

**Writing**  
C1

### **Finnish**

**Listening**  
B1

**Reading**  
B1

**Spoken  
production**  
B1

**Spoken  
interaction**  
B1

**Writing**  
B1

## ORGANISATIONAL SKILLS

### Organisational skills

- Leadership: During the Project Work course in 2019, I led a team of 7 people and four distinct nationalities towards designing a [ship thruster interface](#).

-I have successfully scheduled the weekly meetings, performed the WBS, monitored and managed the project progress (using Gantt charts) and also lead the team by example, being the hardware design engineer.

## COMMUNICATION AND INTERPERSONAL SKILLS

### Communication and interpersonal skills

Excellent communication skills gained during my bachelor of engineering studies conducted in English, as well as workplace experience.

Confident with keeping long presentations.

Tech-savvy person, I can communicate at ease with engineers with different backgrounds and specializations.

## JOB-RELATED SKILLS

### Job-related skills

Programming:

- C/C++
- Googletest
- Python
- Pytest
- GitHub
- GitLab
- Matlab with Stateflow and Simulink
- LabVIEW
- FreeRTOS
- Java and Processing
- SQL
- QT

Computer-aided design software:

- Altium designer
- Autodesk Eagle
- Advanced Design System
- Orcad Pspice
- NI Multisim
- PADS Logic and Layout

Professional experience:

- Advanced experience with software (embedded and PC) design and documentation
- Advanced experience with electronics and PCB design and documentation
- Intermediate experience with real-time operating systems and lightweight IP
- Intermediate experience with the Linux operating system
- Intermediate experience with computer networks
- Intermediate experience with control systems design