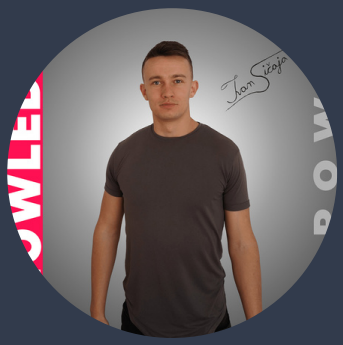


Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

ABOUT ME

Hi.

For approximately 6 months I will open a YouTube channel and create awesome content from artificial intelligence, computer vision, computer science, and robotics (Arduino, Raspberry Pi...). It will help me for my promotion because last 6 years I worked hard entire year, with no free weekends, and no vacation, because I wanted to get the most valuable skills and the second, the most important reason I love to learn things that can be amazingly useful in solving different kinds of valuable problems on the market or the technical tournaments area, etc.

I am sure, it won't be hard for me to find a job with great conditions because I know how much practical knowledge I am bringing with me from a lot of different areas (AI, Robotics, 3D design, 3D Print, CNC, Drone Development, Web Development, Advertising, Photography & Videography, SW & HW, PLC, Renewable Energy, Music, Sport, Science... more details bellow) and how much this kind of personality can be good for the company. All mentioned areas I did from scratch and step by step over the long period in all details.

I am a friendly person which likes to share positive energy and I am always ready to help other people. I am not satisfied with the average, the things always can be done in a better way.

Also, I don't prefer to write a CV :), because it is a kind of a waste of time for me. I did a lot of things and I can't write them down all in my CV... I prefer to talk about the projects which I did or about the solutions for some new problems.

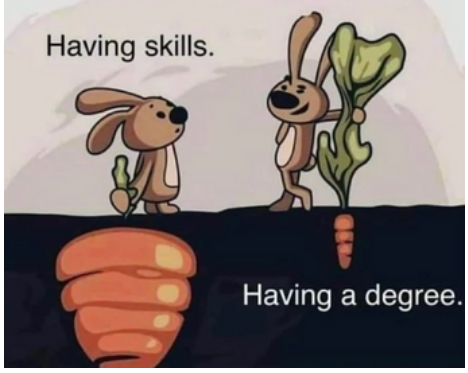
Also, applicable "Artificial intelligence" and the "Computer Vision" areas are and will be my focus areas in at least, the following 2 years, because, the application of AI (e.g. speech recognition and creation) and CV are amazingly powerful.
Also, I want to develop the developing full-stack applications skill.

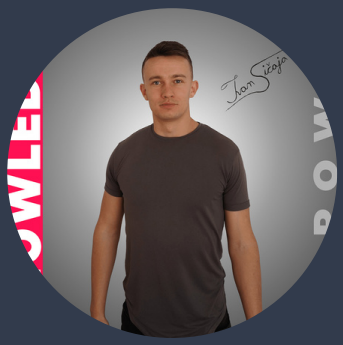
I will improve my current and develop future skills with or without any company, few skills (AI, CV...) to the expert level.
I think it will be good for the company which employs me because I don't need to be additionally motivated (I am over-motivated last 6 years :)) and probably I will work often or think about the problem solution after the job time, not because of company, it will be because I love it.
Win-win. ;)

Currently I am learning: SQL, Flask, Docker, Kubernetes and AWS technologies.

I am looking forwards to all offers which understand and appreciate the power of my experience.

Ivan Sičaja





Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

English
German
Croatian (native)

CERTIFICATE OF APPRECIATION

01. March 2020. – 31. July 2021.

Certificate of appreciation - Community of Technical Culture of the City of Split

October 2019. – September 2021.

Certificate of appreciation - Robotics Association Split

PUBLICATIONS

2021

THE PROJECTING AN AUTONOMOUS ROBOT OF THE RESCUE MAZE CATEGORY

The thesis explains the procedure for designing robots according to the criteria defined by the Robo Cup Junior Rescue Maze 2020 regulations. The criteria for all component selection are described minutely as well as the principles of individual electronic components functionality, programming logic, used programming languages and frameworks, and the entire process of producing the robot body mechanics. The work describes experimental verification of the robot functionality and future work possible improvements.

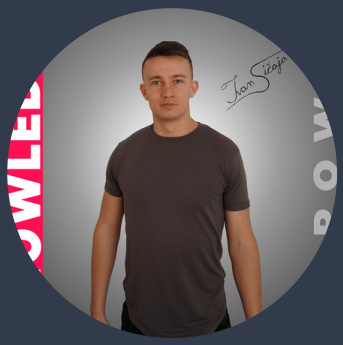
Link:
https://github.com/IvanSicaja/The-projecting-an-autonomous-robot-of-the-rescue-maze-category/blob/main/Project%20files/Diplomski%20Rad/PROJEKTIRANJE%20AUTONOMNOG%20ROBOTA%20KATEGORIJE%20RESCUE%20MAZE%2C%20Diplomski%20rad%20-Ivan%20Sičaja%20compressed.pdf

2019

WIRELESS CONTROLLED ROBOT BASED ON THE ARDUINO PLATFORM

Like the title says, the principle of working robot based on the Arduino platform is precisely explained in this document. Arduino electronics platform, all components which make this robot is precisely explained too. You have an explanation of all signals and protocols which we used in this document. Also, you have wiring schematic of all components, and all steps of production mobile Android app, which we will use for robot car Wi-Fi controlling. With Wi-Fi controlling ability this robot has obstacle avoidance ability. Programming code which we used in this project with an explanation and conclusion of project realization also stay in this document.

Link:
https://github.com/IvanSicaja/Wireless-controlled-robot-based-on-the-arduino-platform/blob/main/Wireless%20controlled%20robot%20based%20on%20the%20arduino%20platform.pdf



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

SKILLS

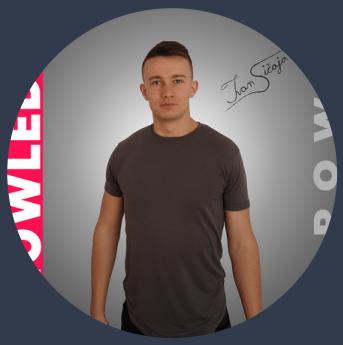
- Computer Vision
- Artificial Intelligence (AI)
- Machine Learning
- Raspberry Pi
- Robotics - Mechatronics
- Software development
- Web Development
- 3D Modeling
- 3D Printing
- CNC Operation
- Drones development
- Renewable Energy
- Graphic Design
- Search Engine Optimization (SEO)
- Photography
- Video Editing
- Meta Ad
- PLC (TIA Portal - Factory IO)

- Python (Programming Language)
- Arduino (Programming Language)
- C (Programming Language)
- C# (Programming Language)
- C++ (Programming Language)
- JavaScript (Programming Language)
- HTML
- CSS
- Bootstrap

- Adobe Premiere Pro
- Adobe Photoshop
- Adobe Lightroom
- Autodesk Fusion 360
- SketchUp
- YouTube

- Football
- Chess
- Table Tennis
- Skiing
- Gym
- Drawing
- Accordion

- Research
- Independence
- Reliability
- Teaching
- Team Leadership
- Teamwork
- Leading Positive Change
- Interpersonal Communication



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

Experience

October 2021. - ongoing

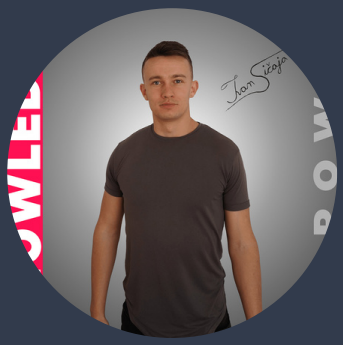
COMPUTER VISION DEVELOPMENT

Idea of this project is to be expert in the "computer vision" area.

Following topics are made from scratch in details, from theory to the real applications.

In the short notes (if you are interested in the details we can schedule a online meeting), processed themes this project are:

- Preprocessing
  - How to extract the every wanted objects from the image
  - Remove the noise
  - Make up for the missing parts from the extracted object
  - Remove non-wanted parts from the extracted object
- Find the wanted pattern on the image, e.g. wanted icon in the input image (useful for the SW test automatization generally)
- Find the similar part of the image (characters, letters, every object, traffic signs etc...)
  - Create or collect the data base
  - Create and optimize the Convolutional Neural Network
  - Train and test the created model
  - Speed up the code (asynchronous programming, multithreading...)
- Analyze the human emotions
- Analyze the human body parts positions
  - Possible to find real-time location, position, angels of the entire human body parts
  - Possible to make the mind-blowing applications with the real time human interaction
- Identify the different persons with exact name and surname
- Real time object tracking
- Deep fake
- Real time free parking space finder
- The everything what is needed. :)
- Etc...



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

Experience

Jun 2022. - ongoing

ALTEN GmbH, Breitwiesenstr.19 70565 Stuttgart

Engineering Consultant - Software tester and automatization devoloper for Porsche Macan 2 project

- Testing Porsche Macan 2 software and problem reporting (CANoe)
- Creating test steps regarding the Porsche requirements
- Creating testing automatization because of the efficiency improvement
- Creating automation for the everything what is needed e.g. creating autonomous excel file editing, automatic report generation...

August 2019. – October 2021.

PROJECTING AUTONOMOUS ROBOT CATEGORY RESCUE MAZE

Shortly, two years spent on the project "PROJECTING AUTONOMOUS ROBOT OF THE RESCUE MAZE CATEGORY"
Robot ability:

- Partially autonomous drive in the maze (need a lot of testing and calibration for fully autonomous drive and labyrinth mapping)
- Autonomous character recognition
- Autonomous color recognition
- Thermal victim recognition
- Package delivery
- Ability to master a climb of 25 degrees (all-wheel drive, strong grip)
- Independent axle maneuvering
- Remembering positions (encoders)...

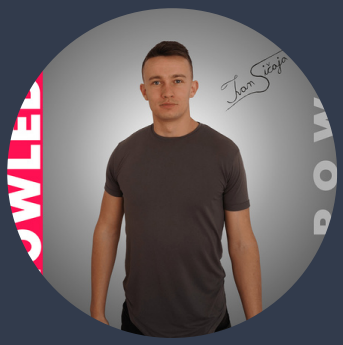
To achieve fully autonomous and labyrinth mapping we need a lot of testing which demands a lot of time. Principles of thinking are good. The project is very complex and demands knowledge in the different areas (3D modeling, 3D printing, advanced programming skills in different languages, researching ability, expert knowledge of every electrical component working principles, image processing, cause-and-effect analysis...) The brains of the robot are microcontroller Teensy 3.5 and Raspberry Pi 4B.

The robot is also equipped with:

- 2x optical camera
- 2x thermal camera
- 6x IR lidar sensor
- 1x color sensor... (more at GitHub)

I would especially like to thank Mirko Pezo and Stjepan Mikulic for theirs exceptional contribution to the development of this project.

All project files are available on my GitHub profile, link:
https://lnkd.in/dYK6fJ3q



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

Experience

July 2021. – September 2021.

THE OPTIMIZATION OF THE CONTROL SYSTEM

Just one of my approximately 50 Arduino projects.

An example of the control system optimization by changing the Arduino ON-OFF regulator with the PID regulator.

All project files are available on my GitHub profile, link:

- https://github.com/IvanSicaja/The-optimization-of-the-control-system

January 2021. – March 2021.

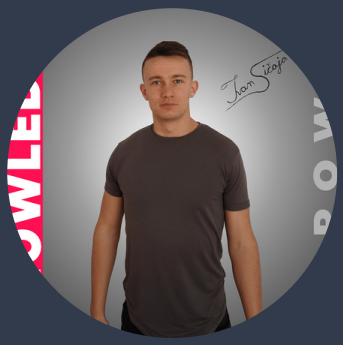
SOLAR ENERGY - SOLAR PANELS

If we wish to know the solar module's profitability in a certain area, it is necessary to perform long-term measurements of certain conditions and make certain calculations. Observation of the behavior of certain natural characteristics in a particular area needs to be monitored for many years. The recommended period for observing and measuring interest data is 10 years. In this project, we did solar radiation calculations using 7 models. Our calculations we compare with NASA and PVGIS data in the order to conclude.

All steps are detailed explained in my paperwork.

All project files are available on my GitHub profile, link:

- https://github.com/IvanSicaja/Solar-energy---solar-panels



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

Experience

June 2020. – September 2020.

LICENSE PLATE CHARACTER RECOGNITION

Neural networks are an amazingly powerful tool that can be used for finding solutions to different types of problems.

In this project, we trained Convolutional Neural Network (CNN) on 432452 image examples. Images are converted in .CSV file because of speeder processing.

The input image is filtered with different filters (Grayscale, Gaussian Blur, Threshold, Binary, Dilatation) in order to:

- Speed up image processing (replace three color channels with one channel, RGB-> grayscale)
- Reduce noises (the dust on the license plate...)
- Getting smooth and sharp character edges is the most important characteristic for successful character recognition

The trained model accuracy is 77.54% which is a target because we want to get high reliability and avoid CNN overfitting.

Image filtering examples and character segmentation are shown in the post.

Detailed explanations and all project files are available on my GitHub profile, link:

- https://github.com/IvanSicaja/License-plate-character-recognition

March 2020. – June 2020.

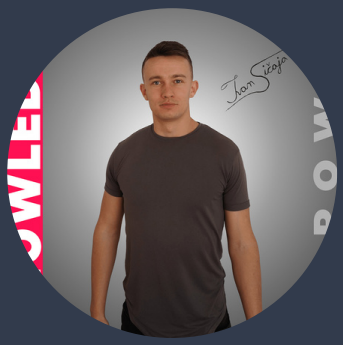
ARDUINO UNO ENERGY CONSUMPTION OPTIMIZATION

An example of the energy consumption optimization on the Arduino Uno.
Steps:

1. The tact's signal frequent prescaling with 2,4,8, and16.
2. Testing all deep sleep modes for Arduino Uno microcontroller (ADC,PWR_SLAVE,STANDBY,PWR_DOWN)
3. Removing DigitalWrite() functions
4. Removing built in LED-s from Arduino Uno

All project files are available on my Github profile, link:

- https://github.com/IvanSicaja/Arduino-Uno-energy-consumption-optimization



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

Experience

February 2020. – April 2020.

GENETIC ALGORITHMS

The "genetic algorithms" is a very interesting and powerful principle of thinking, which can be used for finding the solutions for the different nature of problems.

In this Python code, the target is to find the wanted character sequence, "Split" (the name of the city in Croatia). The program makes the random character sequences, then compares them with wanted sequences. The defined percentage of the best matches enters the new generation which again becomes randomly modified, and compared with the wanted sequence. The best match sequences enter the new generation. The process is repeated until all possible combinations of characters are compared to the wanted sequence, and the solution was found.

The processing speed depends on the wanted sequence length. For our case the five-character sequence, "Split", the program found the solution for approximately one minute. Every next character increases the time consumption exponentially.

The program simulation is previewed in the post video:
- https://lnkd.in/diskV-Xx

All project files are available on my GitHub profile, link:
- https://github.com/IvanSicaja/Genetic-algorithms

January 2019. – January 2020.

PIDRIŠ WEBSITE

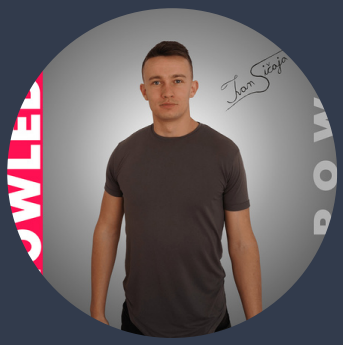
I'm so proud of my village's "simple" website, which I created independently and voluntarily because of my wish to learn the website creating. Every pixel looks exactly like I wish.

The used website creating technology:
- HTML
- CSS
- JS
- BOOTSTRAP

Images and the text can be better, changes will be done in the future because it is very complex to get perfect images in the perfect time and the place, which the best describes the culture, place, and people of the village.

Website domain has expired but you can see all website functionalities at the following link: https://www.youtube.com/watch?v=_BfQDd57cEc

All project files are available on my GitHub profile, link:
- https://lnkd.in/dai8s2ch



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

Experience

August 2018. – August 2019.

WIRELESS CONTROLLED ROBOT BASED ON THE ARDUINO PLATFORM

One year spent on WIRELESS CONTROLLED ROBOT BASED ON THE ARDUINO PLATFORM project, and finally, the project is done.

The robot has AUTOMATIC OBSTACLE AVOIDANCE ability. Also, the robot can be controlled with an Android app that uses Wi-Fi protocol. We developed this Android app, especially for our project.

Brain of robot is an ESP-32 microcontroller that has a built-in Wi-Fi module.

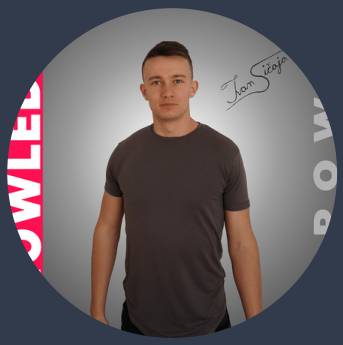
Other components of a robot is:

- 1 x Servo motor SG90
- 1x Ultrasonic sensor HC-SR04
- 4 x DC motor
- 1 x Motor driver L298N model X
- 1 x Three-digit 7-segment LED display (bulit-in voltmetter)
- 2 x 18650 Li-ion 2600 mah battery

A detailed explanation of the project and Arduino code is written in the final work, attached.

I would especially like to thank Mirko Pezo for his exceptional contribution to the development of this project.

- https://github.com/IvanSicaja/Wireless-controlled-robot-based-on-the-arduino-platform



Ivan Sičaja

- ARITIFICIAL INTELLIGENCE
- COMPUTER VISION
- COMPUTER SCIENCE
- ROBOTICS-MECHATRONICS

Contact

Phone
+49 157 303 048 93

Email
isicaj00@fesb.hr

Address
Nordbahnhofstraße 15, 70191
Stuttgart, Germany

LinkedIn
Ivan Sičaja
Link:
https://www.linkedin.com/in/ivan-si%C4%8Daja-832682222

Education

2021

Master of Engineering - MEng, Mechatronics, Robotics, and Automation Engineering
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

2019

Bachelor of Engineering - BE, Electrical, Electronics and Communications
FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Languages

- English
- German
- Croatian (native)

Work experience

Jun 2022. - ongoing

ALTEN GmbH, Breitwiesenstr.19 70565 Stuttgart

Engineering Consultant - Software tester and automatization devoloper for Porsche Macan 2 project

January 2019. – October 2021.

FESB - Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Ruđera Boškovića 32, 21000 Split, Croatia

Robotics Specialist, Developer and Educator

March 2020. – July 2021.

Community of Technical Culture of the City of Split, Varaždinska 53. 21000 Split, Croatia

Robotics Instructor and Education Video Creator

January 2019. – June 2019.

Flow Design Team, Ruđera Boškovića 32, 21000 Split, Croatia

Development Team Lead

YOU TUBE CHANNEL

Short technical and other videos :

- https://www.youtube.com/@ivansicaja2644

CREATIVE WORKS

Draw, photography and video:

- https://www.facebook.com/ivan.sicaja.Photography