

ChakhachiroTheodor



Contact

Zouk Mosbeh,
Kesrwan,
Mount Lebanon,
Lebanon.

+961 71593756

tgc02@mail.aub.edu

Languages

Fluent in English,
Arabic and French
(Spoken and Written).

Computer Skills

OS: Microsoft, Linux
Ubuntu(ROS Kinetic),
Raspberry Pi

MS: Word, Excel,
PowerPoint, Office

Languages: C++,
Python(OpenCV),
Matlab/Simulink,
Arduino, LabVIEW,
Mplab(Assembly-C)

Design: AutoCAD, PTC
Creo, SolidWorks,

Fusion 360, Ansys,EES

Others: Audacity,
Photoshop,CES,Praat.

Soft Skills

Leadership,
Communication,
Team-Building,
Organizational,
Management, Public
Speaking,
Hardworking,
Flexibility, Adaptability,
Curious, Problem
Solving, Ethical.

Career Objective

A passion driven engineer with deep knowledge and focus on the control and systems area as well as robotics and automation, mainly on the design of adaptive and robust controllers as well as Computer Vision and SLAM Mapping. My main objective is to deepen my knowledge in the area of control and robotics and utilize it for a better future.

Experience

- | | | |
|------|--|------------------|
| 2019 | Dar Al-Handasah Shair and Partners
<i>Trainee for 2 months</i>
<ul style="list-style-type: none">Design and management of control systems for multiple projects in Africa and the Middle East under the Control and Instrumentation unit of the Mechanical Engineering Department. Weekly updates and meeting presentations were held to update the client of the progress. | Beirut, Lebanon |
| 2019 | Dar Al-Handasah Shair and Partners
<i>Trainee for 2 months</i>
<ul style="list-style-type: none">Supervised various Electro-Mechanical Systems during the works involved in the Project DEPARTURE UPGRADE – STAGE 1 AT RAFIC HARIRI INTERNATIONAL AIRPORT that are not limited to the installation of the following: Operation and testing of the Baggage handling system, Escalators and Lifts, Plumbing and Drainage, Firefighting system, HVAC, Duct works, Building Management System and RFID systems. | RHIA, Lebanon |
| 2018 | Dar Al-Handasah Shair and Partners
<i>Trainee for 2 months</i>
<ul style="list-style-type: none">Supervised the installation and functioning of HVAC systems such as chillers, FAU and AHU at Beirut-Rafic Hariri International Airport. | RHIA, Lebanon |
| 2017 | Dar Al-Handasah Shair and Partners
<i>Trainee for 3 months</i>
<ul style="list-style-type: none">Supervised the process of mounting, unloading and operating gantry cranes, Ship-to-Shore cranes and Rubber Tyred cranes at the new Tripoli port. | Tripoli, Lebanon |

Education

- | | | |
|-------------|--|------------------|
| 2018 - now | Research Assistant
Vision and Robotics Lab, VRL
American University of Beirut | Beirut, Lebanon |
| 2016 - 2020 | Bachelor in Mechanical Engineering
3.8 GPA in Mechanical Engineering, Dean's Honor List
4.0 GPA in the Control and Robotics Track
American University of Beirut | Beirut, Lebanon |
| 2002 - 2016 | French and Lebanese Baccalaureate
French and Lebanese Baccalaureate in Mathematics and General Science
Official in 2016, Mention Bien
College Saint Joseph Antoura | Antoura, Lebanon |

Major Projects

Hobbies

As a person who really likes sports and wild adventures, my hobbies include playing football, basketball, table Tennis, tennis, swimming, bodybuilding, squash and site searching/hiking.

Other projects

Design and programming of an ultrasonic radar sensor using Arduino and LabVIEW

Design and manufacturing of a small scale retractable roof using Plexiglas and shape memory alloys

Sumo robotics competition using MyDAQ and LabVIEW

PID controlled Inverted pendulum on a rack using Matlab Simulink

Stress and Fatigue Analysis of a Super Mileage Car using Ansys Workbench after designing a complete gear mechanism for power transmission on Solidworks.

Feasibility study on the implementation of wave energy converters in Lebanon

2019 - now	Final Year Project (In charge of the Mechanical Design and Mechatronics) Automated UAV that plants seedlings in harsh environments and keeps track of their mortality along with other data in order to combat forest fires and other deforestation incidents. A report of the 9 months' work was written and presented in front of the Lebanese Reforestation Initiative LRI and a jury team composed of Electrical and Mechanical Professors at AUB. Now pursuing this project with LRI and AUB VRL.	AUB, Lebanon
2020	IROS 2020 participant (2nd author) International Conference on Intelligent Robots and Systems participant: Submitted a paper titled "A Comparative Assessment of Map Alignment Techniques". The paper presents a novel metric to assess map merging techniques in MRSLAM.	AUB VRL, Lebanon
2020	System Identification of a Heat Exchanger (Team Leader) Given a dataset obtained from an already running cross flow heat exchanger, performed a system identification study to optimize the control of the outlet temperature of the fluid through control of the input fluid velocity. The process is a liquid-saturated steam heat exchanger, where water is heated by pressurized saturated steam through a copper tube. The models used are not limited to the following: Box Jenkins, OE, ARX, ARMAX, NL Hammerstein-Wiener.	AUB, Lebanon
2019 - 2020	Quanser Aero Platform (Team Leader and 1st author) Design of multiple controllers that provide good output tracking and model following with disturbance rejection. The designed controllers include an LQR, LQE, LQG, multiple SISO and MIMO adaptive controllers which include but are not limited to MRAC full state feedback, MRAC output feedback, ISTR with disturbance rejection, an adaptive controller based on the normalized MIT rule. A comparison of the results was assessed to determine the optimal controller and a paper titled "Control of a 2-DOF Helicopter" was submitted and presented.	AUB, Lebanon
2019	Tele-operation system (Team Leader) Design of a linear controller that offers good position tracking performance as well as an adequate transparency ratio for a novel pneumatic tele-operation system through a full-state feedback controller, an output feedback controller, a virtual sensing system, LQR, LQE, LQG, in addition to detailed system analysis. A presentation was also done for senior engineering undergraduates and masters students.	AUB, Lebanon

Extra Curricular Activities

2016 - now	Institute of Electrical and Electronics Engineers AUB active member	Beirut, Lebanon
2016 - now	American Society of Mechanical Engineers AUB Substitute Cabinet member	Beirut, Lebanon
2016 - now	Robotics Club AUB Active member	Beirut, Lebanon
2016 - now	Physics Club AUB Active member	Beirut, Lebanon
2019	MIT Solveathon 2019 Participant under the category "Community-Driven Innovations" Team name: "From Down to Town" Developed an idea for an app to help improve the quality of government responses to society's need in terms of infrastructure, health and well-being.	Beirut, Lebanon
2018	IEEE Build It Weekend 3.0 4th place: Design, manufacturing and programming of an LED piano teacher for dyslexic people using Arduino	Beirut, Lebanon