



# Batuhan YALCIN

**Date of birth:** 28/10/1999 | **Nationality:** Turkish | **Gender:** Male | **Phone**

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**Github:** <https://github.com/batuhanyalcin> |

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Troy, NY 12180

## WORK EXPERIENCE

15/08/2024 – Current NY, USA

**RESEARCH ASSISTANT** RPI – MANE DEPARTMENT

- Working on CFD simulations for hypersonic flows
- Designing own solver to be used in CFD calculations
- Developing software tools for CFD applications

14/07/2023 – 14/07/2023 Current

**PC/MOBILE GAME DEVELOPMENT** Forest Run

- Developing PC/Mobil game in Unreal Engine
- Including 3D design, environment design, blueprint coding

14/10/2022 – 14/07/2023 Ankara, Turkey

**RESEARCHER** TUBITAK UZAY - SPACE TECHNOLOGIES RESEARCH INSTITUTE

- TUBITAK Space AYAP Project (Moon Research Project)
- Working on and conducting calculations in computer setting for Deep Space simulations
- Designing an interface and performing simulations

24/04/2023 – 22/05/2023 Istanbul, Turkey

**INTERN** UNLU SECURITIES INC.- UNLU & CO

- Investment Consulting

07/09/2021 – 26/06/2023 Istanbul, Turkey

**MENTOR** KOC UNIVERSITY

- Providing academic and social mentorship support to freshman students.

05/06/2022 – 01/11/2022 Bursa, Turkey

02/08/2021 – 22/10/2021 Bursa, Turkey

**PART -TIME ENGINEER** ROBERT BOSCH BU4, R&D

- Creating a database for the testing systems for high-pressured gasoline pumps
- Testing analysis and computer environment simulation
- Developing several automation tools

16/06/2021 – 16/07/2021 Istanbul, Turkey

**INTERN** KALE ARGE, R&D

- Participating in the Turkey's first turbojet engine project
- Conducting research on a new type of patented pyro for higher altitude

05/08/2020 – 02/09/2020 Istanbul, Turkey

**INTERN** DELTAV (SPACE TECHNOLOGIES INC.), R&D

- Participating in Turkey's first Hybrid Rocket engine testing and designing systems
- Conducting research on Mars and alternative propellant and propulsion systems as well as finding alternative fuels for Mars missions using CO2

03/06/2019 – 01/07/2019 Kocaeli, Turkey

**INTERN** PARSAN COMPANY

- Assisting the manufacturing of machines, and forging processes

29/01/2018 – 15/06/2018 Istanbul, Turkey

**RESEARCHER** KUAR: KOC UNIVERSITY - ARCELIC RESEARCH CENTER FOR CREATIVE INDUSTRIES

- Developing a smart pedometer for clothing that displays the area covered on the shoulder, arm or chest side of the garment in an effort to gauge how people feel about social sharing.
- Focusing on how people view social sharing.

## EDUCATION AND TRAINING

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15/08/2024 – Current Istanbul, Turkey

**PhD IN AEROSPACE RPI – MANE Department**

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Key Modules:

- *Operating Systems*
- *Data Structures and Algorithms*
- *Programming Language*
- *Concepts Software Engineering*
- *Medical Image Analysis*
- *Computer Graphics*
- *Image processing*
- *Machine Learning*

07/09/2020 – 17/06/2023 Istanbul, Turkey

**BACHELOR'S DEGREE IN COMPUTER ENGINEERING** Koc University

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*100% Scholarship (Anatolian Scholarship)*

Key Modules:

- *Operating Systems*
- *Data Structures and Algorithms*
- *Programming Language*
- *Concepts Software Engineering*
- *Medical Image Analysis*
- *Computer Graphics*
- *Image processing*
- *Machine Learning*

*Capstone Project: Balance App: Designing an app who monitors patients balance and gives report to the doctors.*

**Address** Istanbul, Turkey     **Final grade** 3.51/ 4.00

## CERTIFICATIONS

**07/09/2020 – 01/09/2022**

**Aerospace Track Programme**

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*Koc University, Istanbul, Turkey*

*Final Grade: 4.00 / 4.00*

16/08/2017 – 01/09/2022 Istanbul, Turkey

**BACHELOR'S DEGREE IN MECHANICAL ENGINEERING** Koc University

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*100% Scholarship (Anatolian Scholarship)*

Key Modules:

- *Fluid Mechanics*
- *Thermodynamic*
- *Heat Transfer*
- *Numerical Methods*
- *Introduction to Aerospace Engineering*
- *Rocket Propulsion Systems*
- *Dynamics*
- *Control*

*Capstone Project: Hop-Bot Project: Designing a hopping robot for the exploration and rescue missions.*

**Address** Istanbul, Turkey     **Final grade** 3.51/ 4.00

09/2013 – 06/2017

**HIGH SCHOOL DIPLOMA** Malatya Science High School

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## PUBLICATIONS

12th ANKARA INTERNATIONAL AEROSPACE CONFERENCE · Sep 14, 2023

### DESIGNING OF A LINK BUDGET ANALYSIS TOOL FOR SPACE MISSIONS BASED ON PYTHON

In this comparative study, a link budget analysis tool (LBAT) is developed based on Python Django framework as a part of the general mission analysis tool. Mathematical model is developed in Python and web-based graphical user interface (GUI) is developed through Django framework. Model-view-controller (MVC) pattern is followed as a base architecture. By giving various appropriate input parameters such as ground station location, transmitter and receiver specifications, antenna parameters, several losses, and system requirements, tool calculate the energy per bit ratio over noise spectral density ( $E_b/N_0$ ). Results are also compared to the Systems Tool Kit (STK) for verification.

Güngör, Y., Yalçın, B., & Dağ, E. (2023). Designing of a Link Budget Analysis Tool for Space Missions Based on Python (AIAC-2023-113). In Proceedings of the 12th Ankara International Aerospace Conference (AIAC'2023), September 13-14, 2023. Retrieved from <http://aiac.ae.metu.edu.tr/paper.php/AIAC-2023-113>

## LANGUAGE SKILLS

Mother tongue(s): **TURKISH**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b> C1		C1	C1	C1	C1
<b>GERMAN</b> A1		A1	A1	A1	A1
<b>CHINESE</b> A1		A1	A1	A1	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## DIGITAL SKILLS

Django | Python | Java | HTML | C | Swift | MS Office | MySQL | Microsoft SQL | MongoDB |  
Ansys CFD | Ansys Statical Structure | MATLAB | Siemens NX | css | C++ | React Native | OpenGL  
Unreal Engine 5 (Beginner) | Unity (Beginner)

## ADDITIONAL INFORMATION NETWORKS

### NETWORK AND MEMBERSHIPS

2019 – 2020

#### Board Member, Koc University ASME

- Organizing bridge competitions at the university and in alumni meetings
- Teaching students NX design program and 3D printing methods

2018 – CURRENT

#### Member, ISOV (Istanbul Chamber of Industry Foundation)

- Attending weekly meetings, and seminars with businesspeople, education seminars regarding business life, and volunteering activities to support social justice

12/2017 – CURRENT

#### Authorized Area Leader, TunnelX Maker-Space

- Providing the working area with necessary equipment, such as 3D printer, and drill for students who are working on their final project
- Preparing workshops with Maker-Space members or with some startups
- Managing and supporting persons, who is willing to do engineering projects or projects from other areas

2017 – 2020

#### Member, Koc University IEEE

- Taking responsibility on the organization of TechSummit Conferences
- Attending local and National IEEE activities

## SOCIAL AND POLITICAL ACTIVITIES

19/09/2021 – CURRENT KOC UNIVERSITY

### MENTOR

- Providing academic and social guidance to newly admitted students throughout the year
- Assisting new students to help them build academic relationships

## CONFERENCES AND SEMINARS

15/10/2022 – Istanbul, Turkey

**Zirve 23 (Summit 23)** <https://yirmiuc.org/>

Volkswagen Arena

16/11/2018 – Istanbul, Turkey

**What Does Science Do?** Prof. Dr Mustafa Cetiner Koc

University

25/04/2018 – Istanbul, Turkey

**Next Generation Energy: Past, Present and Future** Asst. Prof Onur Ergen Koc

University

09/05/2018 – Istanbul, Turkey

**Space Technologies and Journey to MARS** Ozan Kara Koc

University

07/05/2018 – Istanbul, Turkey

**Bird watching art and bird paradise Anatolia** Prof. Dr Ilhami Kiziroglu Hacettepe

University & Koc University

04/05/2018 – Istanbul, Turkey

**The Rise of Artificial Emotional Intelligence** Bjorn Schuller, Augsburg Uni&Imperial College Koc University

04/05/2018 – Istanbul, Turkey

**Panel: Artificial Intelligence** Deniz Yuret, Metin Sezgin, Berkin Malkoc Koc

University

04/05/2018 – Istanbul, Turkey

**Panel: The Digital Age in Life Sciences** Ozlem Keskin, Mehmet Gonen, Ozgur Baris Akan, Onder Ergonul Koc University

04/04/2018 – Istanbul, Turkey

**From Engineering to Civil Society** Erdal Yildirim General

Manager

Vehbi Koc Foundation Koc

University

12/12/2017 – Istanbul,

Turkey

**Entrepreneurship Club Hult Prize Design Thinking** Koc University

08/11/2017 – Istanbul, Turkey

**Scientifically Based Industrial R&D for High Value- Added Products: Koc University Production and Automation**

**Research Center** Koc University

18/10/2017 – Istanbul, Turkey

**Quantum world: A view from the point of view of physics, math, chemistry and philosophy** Prof. Dr Ersin Yurtsever

Koc University

## PROJECTS

03/2023 - 06/2023

**Balance Monitoring App** Monitors patient balances, reports to the doctor, manages doctor appointments, maintains hospital and patient data, and oversees patient information.

GitHub Link: [https://github.com/batuhanyalcin/PROJECTS/tree/main/COMP-491-B alance-Monitoring](https://github.com/batuhanyalcin/PROJECTS/tree/main/COMP-491-B%20alance-Monitoring)

04/2023 – 05/2023

**Low Light Image Enhancement Methods** Project:

<https://github.com/batuhanyalcin/PROJECTS/tree/main/Low%20Light%20Image%20Enhancement%20Methods>

Course Assignments: <https://github.com/batuhanyalcin/Image-Processing>

Course web page: <https://aykuterdem.github.io/classes/comp527.s23/>

09/2022

**Brick Game in Java Using UML** <https://github.com/batuhanyalcin/PROJECTS/tree/main/GAMES%20in%20JAVA/>

brick\_game\_with\_UML\_several\_dessin\_patterns

09/2022

**Pneumonia Detection High Precision High Recall** <https://github.com/batuhanyalcin/PROJECTS/tree/main/Pneumonia%20Diagnosis%20recall%20%2598>

09/2022

**Dynamic Motion Analysis of the Fowler Flaps** [https://github.com/batuhanyalcin/PROJECTS/tree/main/MECHANICAL\\_ENGINEERING/Fowler\\_Flap](https://github.com/batuhanyalcin/PROJECTS/tree/main/MECHANICAL_ENGINEERING/Fowler_Flap)

08/2022

**TWA800 Accident Investigation** [https://github.com/batuhanyalcin/PROJECTS/tree/main/AERO%20SPACE/TWA800\\_BOEING747\\_ACCIDENT\\_ANALYSIS](https://github.com/batuhanyalcin/PROJECTS/tree/main/AERO%20SPACE/TWA800_BOEING747_ACCIDENT_ANALYSIS)

08/2022

**Spacecraft Control with Pthreads** [https://github.com/batuhanyalcin/PROJECTS/tree/main/OPERATING%20SYSTEMS/Spacecraft\\_Control\\_with\\_Pthreads](https://github.com/batuhanyalcin/PROJECTS/tree/main/OPERATING%20SYSTEMS/Spacecraft_Control_with_Pthreads)

08/2022

**Operating System Design** <https://github.com/batuhanyalcin/PROJECTS/tree/main/OPERATING%20SYSTEMS/Shellfyre>

08/2022

**Soft Landing to the Moon from Lunar Orbit** [https://github.com/batuhanyalcin/PROJECTS/tree/main/AERO%20SPACE/SOFT\\_LANDING\\_MOON\\_FROM\\_LUNAR\\_ORBIT](https://github.com/batuhanyalcin/PROJECTS/tree/main/AERO%20SPACE/SOFT_LANDING_MOON_FROM_LUNAR_ORBIT)

**Vertical Vacuum Cleaner NX Drawing Design Ansys Force Analysis** <http://home.ku.edu.tr/~ilazoglu/mech203/projects/Subpages/Fall19/20/index.html>

## HONOURS AND AWARDS

**Vehbi Koc Honour Award – Koc University 2019-2023**

**Full-Merit Scholarship – Koc University**

**Second Place in Malatya Local Tennis Tournament**

## VOLUNTEERING

11/2017 – 11/2019

**Member, Koc University Volunteers Tiny Hearts Project | KUMYUP**

- Spending time with children in Seyh Zayed Orphanage in Bahcelievler on every Saturday
- Aiming to teach them the feelings of “secure attachment and separation”

11/2017 – 11/2018

**Member, Koc University Volunteers Education Society**

- Giving drama lesson to fifth grade students

2017 – 2021

**Member, Koc University Nature Volunteers Society**

- Trying to increase sustainability at university
- Raising awareness on the environment
- Conducting cleaning activities at Sariyer shore

## SKILLS AND INTERESTS

### Professional and Academic Skills

- Machine learning
- Aerospace
- Space Science
- Quantum
- Plasma
- Data entry and analysis
- Leadership
- Presentation
- Investing and forecasting stock assets

## CERTIFICATIONS

**07/09/2020 – 01/09/2022**

**Aerospace Track Programme**

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*Koc University, Istanbul, Turkey*

*Final Grade: 4.00 / 4.00*