

Sametcan Venedik

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B.Sc.
2019–2024

Afyon Kocatepe University, Turkey
Mechatronics Engineering

- CGPA: 2.88/4.00
- Academic focus: Control systems fundamentals, embedded systems basics, and introductory mechatronic system design
- Graduation Project: Basic RFID-based personnel access control system.

A.Sc.
2017–2019

Akdeniz University, Turkey
Mechatronics

- CGPA: 3.86/4.00
- Practice-oriented curriculum including PLC-based control exercises, actuator selection fundamentals, CNC machining basics, technical drawing, and introductory C programming

RESEARCH EXPERIENCE

2024–2025

Cherenkov Radiation–Based Imaging for Device Accuracy Verification

- Conducted applied R&D on Cherenkov radiation–based optical imaging as an alternative method for device accuracy verification
- Performed experimental measurements and evaluated the correlation between acquired radiation images and reference planning data
- Designed experimental setups and test procedures to assess system accuracy and repeatability
- Analyzed system performance by comparing measurement results with established calibration and verification methods

PROJECTS

2024–2025

Industrial Automation and Measurement System(Confidential)

In-house R&D Project, Physmart Solutions

- Designed and developed a fully automated measurement and data processing system to reduce manual labor in internal operations
- Led end-to-end system development, covering mechanical design, hardware selection, software architecture, and system integration
- Designed the mechanical structure and Cartesian motion system using SolidWorks, including integration of linear mechanisms, switches, and peripheral devices
- Developed a Python- and Qt-based central control software enabling real-time device control, data acquisition, processing, visualization, and automated decision-making
- Implemented multi-process architecture with USB-based communication to STM32-controlled sub-systems, real-time system monitoring, fault detection, and diagnostic logging, validated through continuous operational use

2024–2025

Cherenkov Radiation–Based Imaging System for Accuracy Verification

TÜBİTAK 1507 R&D Project, Physmart Solutions

- Designed and developed a test and measurement system to verify radiotherapy device accuracy by comparing Cherenkov radiation images with treatment planning data
- Led end-to-end system development, including mechanical design, prototyping, software development, and experimental validation
- Designed a precision mechanical structure (0.1 mm rotational, 1 mm axial accuracy) using SolidWorks and supported design decisions through basic deflection analysis
- Developed a Python- and Qt-based PC application for real-time image acquisition, processing, visualization, and data logging using OpenCV and third-party camera libraries
- Validated system accuracy through experimental radiation measurements and comparison with established calibration methods

PROFESSIONAL & ACADEMIC EXPERIENCE

2024 – Present	<div>Physmart Solutions, Turkey</div> <div>Mechatronics Engineer</div> <ul style="list-style-type: none">Designed electromechanical devices from concept to serial production using SolidWorksSupported R&D-focused product development through prototyping and structural optimizationExecuted mechanical redesign of an existing device, including enclosure re-modeling and external manufacturing coordinationPerformed basic structural simulations to evaluate load-induced deflectionConducted device-level debugging across mechanical assemblies, PCB designs (Altium), and STM32-based embedded softwareRe-developed PC-based control software using Python and Qt, integrating hybrid local/remote data handling
2022 – 2023	<div>BTECH Innovation, Turkey</div> <div>Intern</div> <ul style="list-style-type: none">Independently learned and applied nTopology for lattice and HEX structure design on training and evaluation partsDesigned HEX-based lightweight geometries using stress-informed design concepts for additive manufacturing studiesGained hands-on experience in SLA, FDM, and SLS additive manufacturing processes, with active involvement in production workflowsOperated additive manufacturing systems and developed practical understanding of support strategies, build constraints, and material behaviorConducted design-for-additive-manufacturing (DfAM) studies on non-production components to evaluate manufacturability and structural efficiency

REFERENCES

References available upon request

SKILLS & ABILITIES

Programming	Python, C, MATLAB
Embedded	STM32, digital / analog I/O, PID control
Mechanical Design	SolidWorks, nTopology
Electronics Tools	Proteus, Altium Designer (debug level), Git
Manufacturing	Additive manufacturing (FDM, SLA, SLS)
Languages	Turkish (Native), English (Technical reading)