Sametcan Venedik

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B.Sc. **Afyon Kocatepe University**, Turkey
2019–2024 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. **Akdeniz University**, Turkey
2017–2019 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 subsystems, real-time system monitoring, fault detection, and diagnostic logging, validated through continuous operational use

Cherenkov Radiation–Based Imaging System for Accuracy Verification
2024–2025 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

Physmart Solutions, Turkey
2024 – Present Mechatronics Engineer

- Designed electromechanical devices from concept to serial production using SolidWorks
- Supported R&D-focused product development through prototyping and structural optimization
- Executed mechanical redesign of an existing device, including enclosure re-modeling and external manufacturing coordination
- Performed basic structural simulations to evaluate load-induced deflection
- Conducted device-level debugging across mechanical assemblies, PCB designs (Altium), and STM32-based embedded software
- Re-developed PC-based control software using Python and Qt, integrating hybrid local/remote data handling

BTECH Innovation, Turkey
2022 – 2023 Intern

- Independently learned and applied nTopology for lattice and HEX structure design on training and evaluation parts
- Designed HEX-based lightweight geometries using stress-informed design concepts for additive manufacturing studies
- Gained hands-on experience in SLA, FDM, and SLS additive manufacturing processes, with active involvement in production workflows
- Operated additive manufacturing systems and developed practical understanding of support strategies, build constraints, and material behavior
- Conducted 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)