

## Furkan Barış

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### Summary

Computer Engineering student specializing in the intersection of Machine Learning, Deep Learning, and Cybersecurity. Currently focused on designing and implementing AI-driven Intrusion Detection Systems (IDS) and threat mitigation tools. Passionate about building robust architectures to solve complex security challenges through academic research and practical applications.

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### Education

**Karadeniz Technical University** *B.S. in Computer Engineering* | Expected Graduation: June 2026

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### Projects & Experience

#### Intrusion Detection System (IDS) for IoMT Networks

- Engineered a Convolutional Neural Network (CNN)-based Deep Robust One-Class Classification (DROCC) model for anomaly detection in Internet of Medical Things (IoMT) environments.
- Enhanced pattern recognition capabilities by transforming tabular network traffic and sensor data into 2D grayscale image formats, capturing complex spatial relationships.
- Leveraged adversarial learning strategies to enable the model to detect zero-day cyber threats while being trained exclusively on "Normal" traffic profiles.

#### Multimodal QR Code Phishing Detection System

- Architected and deployed a multimodal deep learning system using Python and PyTorch to detect malicious QR code phishing (Quishing) attacks.
  - Designed a parallel branch architecture fusing a Transformer-based lexical encoder (for URL text), an MLP (for QR structural features), and an MLP (for statistical URL features).
  - Implemented a cross-modal attention mechanism to dynamically fuse 32-dimensional embeddings from each branch, optimizing the final binary classification output.
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### Technical Skills

- **Programming Languages:** Python, C, C++, Bash
- **Machine Learning & AI:** PyTorch, Deep Learning Architectures (CNNs, Transformers, MLPs)
- **Tools & Technologies:** Git, Docker, Linux
- **Languages:** English (B1-B2)