
# TED UNIVERSITY

## CMPE 491 – Senior Project I

## Fall 2025

## AKKE – Project Proposal

**(SMART COMMAND AND CONTROL GLOVE)**

**Webpage:** https://ilter-akke.github.io/website/

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## Project Description

The AKKE project aims to develop a real-time, wearable hand gesture recognition system that enables silent, secure, and instantaneous communication in environments where speech is not possible or line-of-sight contact is unavailable.

Sensor data collected from the glove will be processed in real time using machine learning algorithms to accurately recognize predefined hand gestures. The recognized commands will then be transmitted to team members through a secure communication channel.

This system targets military operations and noisy environments, where speaking is risky, difficult, or impossible, and aims to ensure disciplined, fast, and reliable command-control communication.

Within the scope of the AKKE project, the design of data collection, feature extraction, machine learning–based classification, and secure data transmission modules will be carried out. By the end of the project, a fully functional prototype that operates under real-world conditions is expected to be developed.

## Expected Outcomes / Objectives

- Development of a smart glove system capable of recognizing predefined hand gestures in real time.
- Enabling communication without the need for speech or line-of-sight contact.
- Integration of wearable systems, embedded software, and machine learning technologies within a unified framework.