

OSTİM TECHNICAL UNIVERSITY

**2024-2025 SEMESTER**

**ELECTRICAL-ELECTRONIC ENGINEERING DEPARTMENT GRADUATION PROJECT PROPOSAL FORM**

|  |  |
| --- | --- |
| **Lecture Code: EEE400** | **Lecture Name: Graduation Thesis** |
|  |  |  |  |

|  |  |
| --- | --- |
| **Project Title / Number of Students:** | **Automated Retinal Image Analysis for Disease Detection Using Deep Learning Techniques /2 Students** |
| **WORKS AND PROCEDURES TO BE DONE IN THE PROJECT****(Put the item number on the left and write it in order)** |
| **Item**1. Data Collection and Preparation: Examining retinal image databases, selecting an appropriate dataset, and preparing the images for analysis.
2. Image Preprocessing: Enhancing image quality through techniques such as noise reduction, histogram equalization, and vessel structure enhancement.
3. Feature Extraction: Extracting important features such as retinal blood vessels, the optic disc, and the macular region.
4. Model Development: Training deep learning models (e.g., CNN, U-Net) for disease detection.
5. Model Training and Evaluation: Testing the accuracy and performance of the developed models using various evaluation metrics (accuracy, precision, recall, F1-score).
6. Result Analysis: Analyzing the results and the model's performance in detecting diseases.
 |
| PROJECT AIMS |
| **Item**1. This project aims to reduce the workload of ophthalmologists and enhance healthcare accessibility, particularly in regions lacking specialized medical personnel.
 |

|  |
| --- |
| **SUPERVISOR** |
| TitleAssit. Prof. Dr. | Name Surnameİclal ÇETİN TAŞ | Signature |