



# COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

## Graduation Project Description Form

**T Project Title:** brain tumor segmentation and classification from MRI scan

**Duration** from mo/year \_\_\_\_\_ till mo/year \_\_\_\_\_

**Project Supervisor(s):** Dr safaa

### Product Category

Algorithm \_\_\_\_\_ Hardware \_\_\_\_\_ Software \_\_\_\_\_

### Standards:

Safety: UL, CE \_\_\_\_\_ IEEE \_\_\_\_\_ FCC \_\_\_\_\_ Other \_\_\_\_\_

### Practical Realization Form

PCB \_\_\_\_\_ Firmware \_\_\_\_\_ Embedded CPU Kit (ARM, ..etc): \_\_\_\_\_

PC Software \_\_\_\_\_ Ready-made Package \_\_\_\_\_ DSP Kit \_\_\_\_\_ FPGA Kit \_\_\_\_\_

VLSI Schematics \_\_\_\_\_ VLSI Layout \_\_\_\_\_ VLSI Silicon (ASIC) \_\_\_\_\_

### Language

VHDL/Verilog \_\_\_\_\_ Matlab \_\_\_\_\_ C/C++/Java \_\_\_\_\_

### Productization

Finished Product Form: \_\_\_\_\_ Possible Commercialization \_\_\_\_\_

Amount of funds needed for buying components: \_\_\_\_\_

IEEE GOLD Made-In-Egypt/Engineering Day: \_\_\_\_\_

ITAC (ITIDA) or NTRA Funding Application: \_\_\_\_\_

### Testing

Functional \_\_\_\_\_ Simulation \_\_\_\_\_ Parameters \_\_\_\_\_ Final Hardware \_\_\_\_\_ Other: \_\_\_\_\_

### Lab Test Setup

EMC \_\_\_\_\_ Environmental \_\_\_\_\_ Microwave \_\_\_\_\_ Analog Lab \_\_\_\_\_ Other: \_\_\_\_\_

**CAD Tools** (*No unauthentic software is allowed*):

**Elective Classes Required:**



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### Abstract

Segmentation and classification of brain tumor from medical images is still a critical and a complicated job for a radiologist. The contribution of this work is devoted to give an easy and an efficient algorithm for automatic brain tumor segmentation and classification from MR images. The students are required to use easy and simple image processing operations to be able to localize the brain tumor. In addition, the students are come up with an automatic algorithm to classify the type of brain tumor from its shape.

Prerequisites: Digital signal processing and neural networks, as well as very good MATLAB background in.



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References and Links