

شهادة قيد
كلية الحاسبات والمعلومات
جامعة المنيا



نظام ابن الهيثم لإدارة شئون الطلاب 30/12/2021 12:27 مستخرج البيان منه الله عصام حسن



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وقد تحررت هذه الشهادة بناء علي طلبه لتقديمها الي : شركة Dell



رئيس شئون طلاب

عنة اناه حسيه
٢٠١٨/١٢/٢٠

الموظف المختص

طه الله
٢٠١٨/١٢/٢٠

Envision The Future

Dell Technologies Graduation Project Competition for Middle East, Russia, Africa and Turkey

About The Competition

Dell Technologies has launched the annual graduation project competition for senior undergraduate students from universities in Middle East, Russia, Africa and Turkey. The competition is intended to spark the creativity of students for their graduation projects to play an active role in the Transformation of IT and get the opportunity to shine and win prizes.

If you are a senior student who is working on a graduation project in any of the below topics in the **Healthcare, Well-being and Education sectors**, you are welcomed to join us for a very exciting ride!

The targeted topics: IoT, AI, Multi-cloud and 5G.

Submit your entry

Participating teams should submit their Projects Abstracts containing the following information:

Question 1: What is the main problem that you are solving? Why did you choose it?

Question 2: Give a brief overview of the current solutions that you found in your literature survey.

Question 3: Describe how your proposed solution will be used and operated in a real-life environment?

Question 4: Describe the high-Level architecture and the main software and hardware components of your system. (You can use block diagrams)

Question 5: What are the technology platforms that you intend to use in building your

system, such as operating systems, programming languages, backend/frontend stacks, AI models, etc.?

Question 6: Compared to the existing solutions that you have read about, what are the new ideas that you intend to develop and include in your solution?

Question 7: Describe your team's system development methodology and quality assurance process.

Question 8: Give your initial project management plans, especially: distribution of responsibilities and tasks, milestone schedule, training plan, risk management, contingency plans, and change control procedures.

The submitted abstracts will be evaluated based on the following criteria: relevance, originality, feasibility, plan details, research quality, and impact.

The shortlisted projects and teams will be notified to proceed to the next phase of Project Design Layout Submission followed by Final Project Submission for the selection of the winners.

Question 1: What is the main problem that you are solving? Why did you choose it?

We are solving the problem of early detection of "Melanoma" skin Cancer. We chose this problem especially because Skin cancer is the most prevalent type of cancer. Melanoma, especially, is responsible for 75% of skin cancer deaths, despite being the least common type of skin cancer. As with other cancers, early and accurate detection—potentially aided by data science—can make treatment more effective. Melanoma is a mortal disease, but if it is caught early, most melanomas can be cured with minor surgery.

Question 2: Give a brief overview of the current solutions that you found in your literature survey.

The beginning stage to identify whether the skin lesion is malignant or benign for a dermatologist is to do a skin biopsy. In the skin biopsy, the dermatologist takes and cuts some part of the skin lesion and examines it under the microscope. The current process takes at least a week or more, starting from getting a dermatologist appointment to getting a biopsy report. The main goal of this project is to shorten the current gap to just a couple of days by providing the predictive model using Computer-Aided Diagnosis (CAD). The intended software approach uses Convolutional Neural Network [CNN] to classify types of skin cancer from outlier lesions images. This reduction of a gap has the opportunity to impact millions of people positively and save more lives.

Question 3: Describe how your proposed solution will be used and operated in a real-life environment?

"Mela'Zone" is a website that enables you to make early detection of skin cancer, especially melanoma. We want to make our tool accessible for everyone and leverage the existing model and improve the current system. To make it accessible to the public, we will build an easy-to-use website. The user or dermatologist can easily upload the patient information with the skin lesion image. With the image and patient information as input, the AI-trained model will analyze the data and return the results within a split second. Keeping the broader demographic of people in the

vision, we also try to develop a basic infographic page, which provides a generalized overview, analysis, and stories about melanoma and steps to use the online tool to get your results and detailed report.

Question 4: Describe the high-Level architecture and the main software and hardware components of your system.

This project will be a website that you can open in any browser on Windows, Linux, or Mac OS. We will use 4 computers with high-performance processors [core i7 8th generation] + 16 GB ram + 8 GB for viga card connected with strong and stable internet connection. The main software will be VS Code for basic HTML construction, Pycharm for python scripting of AI models, Adobe Photoshop for graphic editing, Chrome developer account, and Chrome for browsing the web pages, and FileZilla FTP client to transfer the HTML files and supporting images and graphics to your web server.

Question 5: What are the technology platforms that you intend to use in building your system, such as operating systems, programming languages, backend/frontend stacks, AI models, etc.?

This project will be for an easy-to-use website, which means that we will need :

- 4 computers with a Windows system, Visual Studio Code program, and Pycharm programs.
- Cloud computing a paid account.
- Hosting server and domain.
- Data analysis and visualization tasks.
- Convolutional Neural Network [CNN] in deep learning to generate the AI model.
- Python backend with Flask framework and PostgreSQL database.
- HTML/HTML5, CSS/CSS3, JavaScript framework for responsive frontend.
- Graphic Design programs and paid Adobe Creative Suite for UI/UX work.

Question 6: Compared to the existing solutions that you have read about, what are the new ideas that you intend to develop and include in your solution?

We intend to add more new tools and features to make a better user experience and get accurate results. In future work, we will work on building an AI model depending on the genetic information and DNA profile of the patient to predict that the user will be a case in the future or won't and he is already a case in which level.

Question 7: Describe your team's system development methodology and quality assurance process.

Our team follows the Scrum Agile model as the system development methodology. The ultimate value in Agile development is that it enables teams to deliver value faster, with greater quality and predictability, and greater aptitude to respond to change. The agile model aims to incorporate QA at each stage of the project's lifecycle to identify issues as early as possible. Within each sprint, QA engineers test and retest the product with each new feature added. This allows them to validate that the new features were implemented as expected and to catch any problems that may have been introduced. Testing early and often leads to the conservation of time and budget.

Question 8: Give your initial project management plans, especially: distribution of responsibilities and tasks, milestone schedule, training plan, risk management, contingency plans, and change control procedures.

- After determining which problem, we will work on solving, every one of the team has his duty and responsibilities. The team was divided into 3 sub teams:
 - Backend development team that is responsible for developing the website functionality and its features.
 - Frontend team that is responsible for making easy-to-use webpages and producing a better user experience.

- AI team is responsible for generating Machine and deep learning models with the use of CNN to classify types of skin cancer from outlier lesions images.
- The training plan for each sub team will take from 2 to 6 months depending on different needs. During training, we study the problem well to document all requirements for this project. After that, the implementation stage will call us to work. The basic GUI and webpages will be generated and ready for deployment. AI team works on a testing model to enhance their skills and try to deploy it then go for generating our intended model. Finally, we reach the backend role which is responsible for integrating each component to launch the final Machine learning-based website.
- The risks that our team can face while developing the project:
- collecting wrong information about patients for the database.
 - High cost of needs software.
 - The time which we can't finish this high project.
 - Difficulty with understanding the existing system paper.
 - Our technical skill (Flask, ML, CNN, Image Processing, Computer Vision, UX design, cloud computing) needs to learn more and more.
 - Save, Train, and retrieving various data is difficult will make more time and effort.
- Solutions and contingency plans, and change control procedures:
- We will try to work with the minimum hardware which serves the whole process but minimize the cost in the beginning.
 - Time is an Essential Factor so we will accelerate the time of delivery of the project by Using the Accelerator method such as increasing the number of developers considering minimizing the Cost.

- The existing System is difficult and large so for avoiding misunderstanding the system we make periodically Interview, Questionnaire, and Search in documents which is done before.
- Our skills are not enough for this system as it is large, so we work on ourselves hard to deliver the system in the desired Time with Professional products.

Professor Advisor



Department Head



Faculty Dean

