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Creating an AI Ecosystem for Multimodal Data Analysis in the MedGIFT Group

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Abstract

Background: The MedGIFT research group is on the border between medical sciences and computer science, namely medical image analysis and machine learning. The group was created in 2002 and has always had the aim to combine medical image data with other sources of information for medical decision support.

Objectives: Learning objectives include:

1. What is required to position a research group in medical image analysis?

2. How to get credibility in a multi-disciplinary domain?

3. How do research topics evolve over time and how to assure to stay relevant?

Outline:The talk will start with an overview of my personal profile and the history of how the MeGFT research group was started because this has had a strong influence on how the group evolved. Even though the initial name was kept, the topics in the group evolved much over time, mainly around medical topics. The development of systematic evaluation in scientific challenges has had a strong influence on the impact of our research group and thus, I will highlight the history of the ImageCLEF benchmark and how it has made datasets available for a large community and helped in further data-sharing efforts. The multidisciplinary nature of the research groups also helped in creating an ecosystem where researchers could flourish in several related disciplines. The close collaboration with several hospitals also assured that relevant topics are treated and in this respect also the final impact of the work.

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Added Value of Structured Reporting for Medical Practice and Management

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Abstract

Background: Structured reports are getting popular gradually. To increase the adaptation of the technology, we will briefly go over the benefits that structured reports can provide to almost all medical staff and the medical community in general.

Objectives: Learning objectives include:

1. What are the benefits of SR for medical doctors?

2. What are the benefits of SR for patients?

3. How can SR boost high quality research?

Outline: First, I will briefly go over some of the known benefits of SR, as follows:

☐ Disease and domain-specific report templates can increase the clarity and quality of the report.

☐ The use of common data elements ensures the consistent use of terminology across practices.

☐ The use of checklists inherently in structured reports reduces diagnostic errors.

☐ Less grammatical and nongrammatical errors may be introduced into SR even when digital speech recognition is used.

☐ Preserving the completeness of report documentation improves insurance and other reimbursements.

☐ It improves quality.

☐ It may promote evidence-based medicine by integrating clinical decision support tools with radiology reports.

However, the most important factor is to improve research. Each population based on genetic background and ethnicity may require different or specific medical protocols or practice for certain diseases. High quality medical research is needed to address the differences and to build the foundation for more appropriate medical procedures and knowledge generation. The importance of high impact and high-quality research in medicine and medical practice is felt in Iranian universities but irrespective a large amount of government investments on different aspects of medical fields is not