
Diabetic Foot Monitor – AI-driven footcare mapping and outcome prediction

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Project Description:

Diabetic foot ulcer (DFU) and related complications are an important cause of avoidable hospitalisations in Singapore. Despite greater integration of electronic health records data and formal clinical guidance on risk assessment and management, gaining a comprehensive picture of foot care processes has been challenging, due to the heavy use of free text to document such care. While natural language processing (NLP) approaches are being increasingly utilized to harness free text electronic medical records (EMR) data, current tools are fairly simple and limited by data that is publicly available, and the lack of well annotated high-quality datasets that can act as gold standards for model training.

This study will leverage on access to multi-domain clinical databases to develop a gold standard corpus and to build unified NLP architecture to harness actionable features from free text information. This will be combined with structured EMR data to develop and validate a DFU risk prediction model. The content from the NLP engine and predictive model will populate the Diabetic Foot Monitor to provide end-users with a customisable view of foot care processes and outcomes prediction.

Remarks:

For PhD students only