# 100 學年度大四工工專題摘要

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| 第 14 組 | **以基因演算法最佳化觸控式影音播放軟體之介面設計** |
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摘　要

目前隨者智慧型可攜裝置的蓬勃發展，帶動觸控式面板的發展以及需求的增加，未來的趨勢也朝著廣泛運用觸控式面板為主。因此本專題將以最佳化按鍵配置為目的，藉由縮短使用流程以達到良好的績效，並為使用者帶來便利舒適的使用環境，並且建立一套有系統的介面最佳化配置方法，便於未來設計者使用。

本專題選擇在智慧型可攜裝置上所具有的影音軟體人機介面為研究對象，透過問卷調查擷取使用者的心智模式，並根據調查結果的分析與統計，整理出一般使用者的習慣與喜好。更進一步根據問卷分析所得到的結果，確定按鍵的型態配置，進而採用基因演算法設計出能夠媒合使用者心智模式與軟體介面設計概念的介面配置。

透過基因演算法的運算，提出經過最佳化的影音軟體人機介面配置，透過此設計將可以讓使用者更容易操作，並有更高的使用效率，而此概念更可應用於其它同樣建構在以按鈕為操作基礎的相關裝置，讓未來介面設計更加人性化、更加效率化，以達到更好的使用效果。

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英 文 摘 要

According to the intensively growth of smart portable devicest, promote the development of touch panels and increasing demand, the future trend is towards extensive use of touch-panel-based. Therefore, our goal will be how to optimize the button arrangement for the touch panels, use by reducing the process when we control the devices and achieving good operating experience which includes convenient and comfortable. At the same time, establish a systematic optimization method for interface arrangement to future designers.

In this research, we choose the software of media player which is establish in smart portable devices, we are going to figure out how to design the man-machine interface. Using questionnaire survey to retrieve the user's mental model and, based on analysis of survey results and statistics, the habit of general user can be the best parameter of our designing. Furthermore, use genetic algorithm to designed the interface to meet the users' mental model and the idea of software interface designing principles.

Computing through genetic algorithms, we can get the optimal media HMI(Human-Machine Interface). Through this method will make it easier to design, to operate, having higher efficiency. And this concept can also be applied to other interface-design in order to operation of related devices. So that future interface design can be more human friendly, more efficiency, much easy to design and use.