

Dr. Vincent W.L. Tam (Principal Investigator) Dr. Edmund Y.M. Lam (Co-Investigator)
 Dr. C.H. Leung (Co-Investigator) Dr. Diane Salter (Co-Investigator)
 The University of Hong Kong

Developing An Interactive and Pen-Based Simulator to Enhance Education and Research in Computer Systems

The recent advance in pen-based computing and mobile devices empowers many innovative e-learning systems with increased interactivity and improved features. In this paper, we proposed an innovative and pen-based COMPAD simulator to enhance both education and research in computer systems. Being model-based, our proposal is adaptive and different from many commercially available Windows-based emulators that are customized for specific computer architectures. Besides, our COMPAD simulator allows learners to flexibly modify any part of a program through pen-based inputs, and instantly visualize about the computed results. In this way, the COMPAD simulator can support not only education but also research such as instruction scheduling in computer systems. To demonstrate the feasibility, we built the COMPAD-PRO as its prototype for empirical evaluation. After all, this work stimulates many interesting directions for further exploration.



Fig 1 – A Demonstration of our COMPAD-PRO Simulator on the UMPC

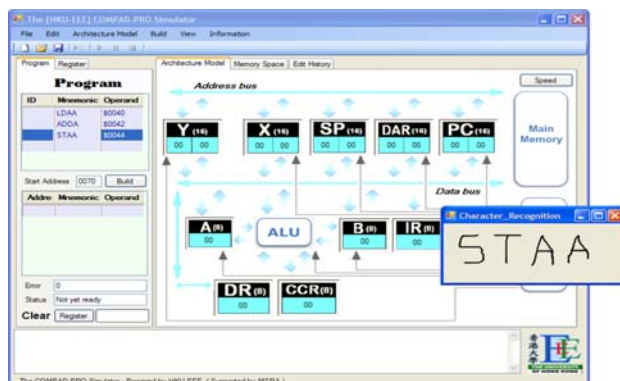


Fig 2 – The Handwriting Recognizer of our COMPAD-PRO Simulator

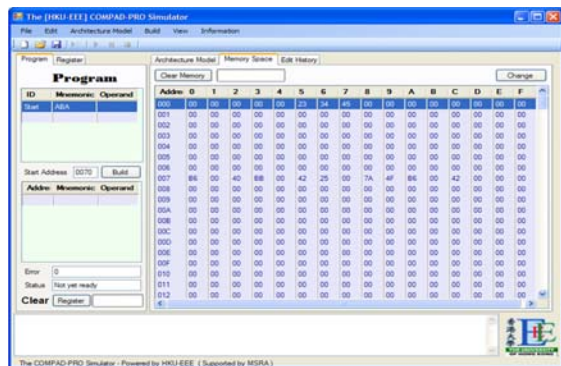


Fig 3 – Our COMPAD-PRO Simulator Showing the Detailed Memory Map