

## Workshop on Spline Approximation and its Applications on Carl de Boor's 80th Birthday

4 – 6 DECEMBER 2017

*Jointly organized with Department of Mathematics, NUS*

### ORGANIZING COMMITTEE:

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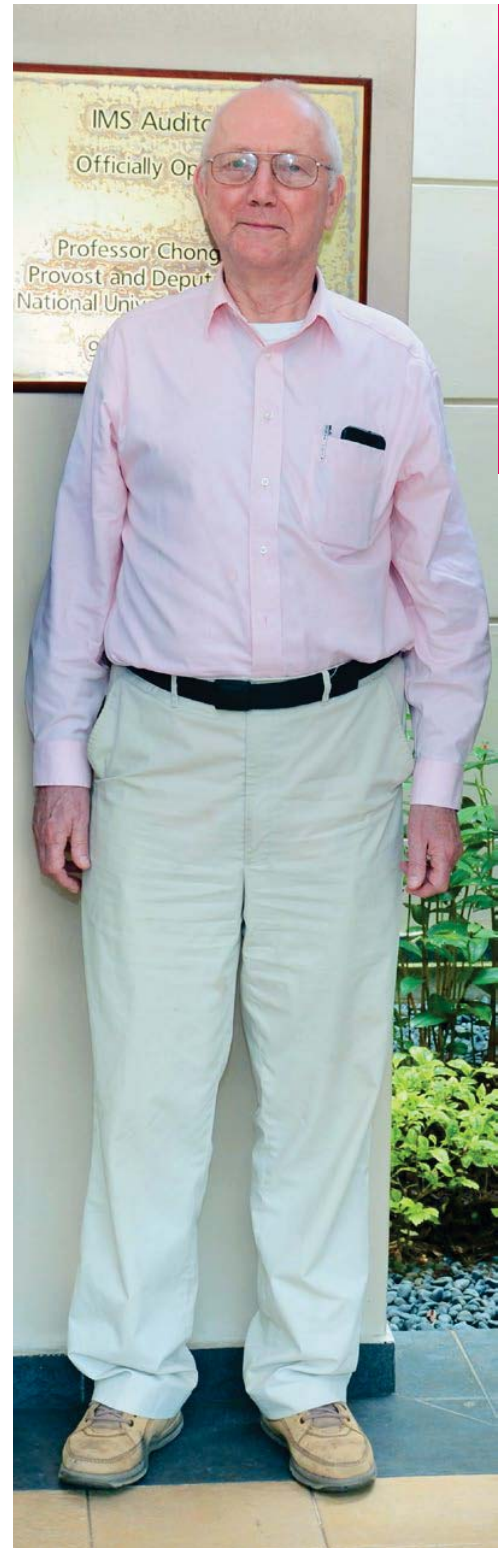
In the late 60s, Carl de Boor embarked on an ambitious program to develop a mathematical foundation for spline functions that would be friendly to computation. The cornerstone of this development was his work on Schoenberg's B-splines – splines with minimal support, and it became clear that spline functions can provide efficient representations of functions, curves, surfaces and digital data. Today, spline functions are widely used in areas such as automotive design, computer aided geometric design, imaging science and data science.

Carl de Boor's contributions to splines, approximation theory, scientific computing, mathematics, and science have not gone unnoticed. In addition to the 2003 National Medal of Science he received in 2005, he has been elected to numerous academic societies in the US and in Europe, including the National Academy of Sciences (1997) and National Academy of Engineering (1993). At the occasion of Carl de Boor's 80th birthday, the workshop brought together a group of mathematicians from many generations to review the glorious history of spline functions, and show new directions of spline functions in both theory and applications.



Party celebration for **Carl de Boor**

A comprehensive review on "From B-splines to box splines" by Rong-Qing Jia (University of Alberta, Canada) provided an excellent overall picture on the contributions of Carl de Boor to spline functions, and fundamental results in this field. Michaël Unser (École Polytechnique Fédérale de Lausanne, Switzerland) discussed the role of spline functions in science and engineering. These discussions have connected applied mathematicians to interesting concepts and applications from engineering. Several other talks on the development of multivariate splines and wavelet frames, for instance the talks given by Amos Ron (University of Wisconsin-Madison, USA)



**Carl de Boor**

and Zuowei Shen (NUS), have shown new research directions of spline functions and approximation. Topics covered in this workshop also included applications of spline functions in computer aided geometric design, partial differential equations and polynomial approximation. There were a total of 19 invited talks, and over thirty participants.