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My Professional Journey Through Mechanics Research: A Personal Retrospective

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Abstract

This is a personal retrospective of the author's professional journey through mechanics research and education (<http://mechanics.tamu.edu>) began while the author was a Ph.D. student in USA in 1970. The publication of a seminal paper on 14 primal and dual variational principles [1] and the two books on mathematical theory of finite elements and variational principles with Dr. J.T. Oden (www.oden.utexas.edu/people/85/) provided the inspiration and paved the way for the author's professional journey through computational mechanics [2-6], composite materials and structures [7], least-squares finite elements models [3-6], higher-order shell finite elements [7], and non-local continuum theories. The lecture will begin with a brief childhood background of the author followed by an overview of the author's highly-cited shear deformation and layerwise theories for composite laminates [7], the penalty and least-squares finite element models of the flows of viscous incompressible fluids [4], a robust shell finite element [3], and non-local mechanics [8,9]. In addition, the graph-based finite element framework (GraFEA) suitable for the study of damage in brittle materials will be discussed [10].

References

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