Abstract:

Computing disciplines are diverse and overlap extensively. ACM provides two dimensions, theory and target level, as a tool to describe the problem spaces of five disciplines of computing: computer science, information systems, information technology, computer engineering, and software engineering. However, there are still many studies reporting that even majors are not entirely clear about the scopes and tasks of their computing disciplines. Various supplementary approaches and models have been proposed to assist the understanding and characterization of computing disciplines, such as through computing traditions, research-focuses, and positions in the business-technology continuum. This paper proposes a new investigation dimension based on a popular inquiry approach as a complementary third dimension to serve as an additional high order lens for understanding computing disciplines. The application of the model on understanding and characterizing the five ACM disciplines and data science is discussed. The model encourages systematic critical thinking, meaningful learning, and deep reasoning.

Citation:

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