

Many Paths to Computational Thinking

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Computational thinking (CT) is a popular phrase that refers to computing's disciplinary ways of thinking and practicing. We acquire those ideas and habits of mind through our work in designing software, simulations, and systems, and they offer powerful mental tools for people who design computations. Although many central ideas of CT are centuries old, a conception of CT as a new way of thinking started to emerge only after the birth of modern computing. CT started to gain wider currency in the academia after the emergence of computational sciences. It also enabled thoroughly empiricist visions for learning and knowledge construction, yet those ideas were not broadly embraced until the 2000s, when a new wave of CT spawned initiatives and educational reforms across the education sector in many countries. This talk presents an overview of the historical currents from which CT has developed as well as some challenges to and misconceptions of CT.