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Raman-Sundström, Manya
A pedagogical history of compactness.
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This nice paper is "an attempt to fill in some of the information that the standard textbook treatment of compactness leaves out. It is not a historical article, *per se*, but a synthesis of historical documents with an eye towards clarifying the main ideas related to compactness." Arguing about the ideas that motivated the notion of compactness, the author discusses the influence of the study of properties of closed, bounded intervals of real numbers (Weierstrass, Heine-Borel and Cousin theorems), spaces of continuous functions (Arzelà-Ascoli theorem and a criterion of compactness of subsets of $C^0[a,b]$), and solutions to differential equations (Peano existence theorem). The development of the two central concepts of compactness stemming from sequences (Bolzano-Weierstrass property) and open covers of real numbers (Borel-Lebesgue property) is traced through the analysis of the notions of countable and limit points compactness (Fréchet), compactness on metric spaces (Hausdorff), and open-cover compactness (Alexandroff and Urysohn). The paper concludes with an overview of the theory of nets (Moore and Smith) and filters (Cartan and Smith); both being included in the latest edition of a popular textbook by *J. R. Munkres* [Topology. 2nd ed. Upper Saddle River, NJ: Prentice Hall (2000; Zbl 0951.54001)]. *Svitlana P. Rogovchenko (Kristiansand)*

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