

# Aimo Tietäväinen

\* 6.7.1937 † 27.9.2022



Aimo Tietäväinen passed away after a short illness in Savonlinna on 27 September 2022. He was born to a family of local merchants in Suistamo on 6 July 1937. The family had to move to Savonlinna as refugees.

Savonlinna became Tietäväinen's second home town. He matriculated from Savonlinna Lyceum in 1956. After military service he started studying at the University of Turku. Due to financial reasons he had to interrupt his studies for a year to teach at a school in Ii. He completed his doctorate in mathematics in 1965. Tietäväinen started his teaching career already in the early 1960s at his home university, first as an assistant, then as an associate professor and full professor. He spent brief periods at the Tampere University of Technology. He retired in 2000. Tietäväinen was invited as a member of the Finnish Academy of Science and Letters in 1978.

Tietäväinen began his scientific work as a number theorist, as a student of Kustaa Inkeri. His dissertation about systems of equations in finite fields dealt with a topic of lively scientific research. Tietäväinen continued his work in number theory and obtained some significant results, such as proof of a long-standing conjecture of S. Chowla. In the beginning

of the 1970s Tietäväinen became interested in error correcting codes where the methods of number theory could be efficiently applied. He became well known internationally after characterizing an important class of codes, perfect codes, in his paper in *SIAM J. Appl. Math* in 1973. The paper became famous and was later published in a collection of classic papers on error correcting codes. This paper alone established Tietäväinen as the father of coding theorists in Finland.

Tietäväinen continued his work on error correcting codes, studying, for instance, cyclic codes and bounds for the corresponding parameters, obtaining general knowledge about code efficiency. His variegated work was largely based on the algebraic theory of finite fields and character sums. He belonged to the editorial board of many international journals and held key roles in conferences. Many of his foreign colleagues became his personal friends. Tietäväinen, as well as his students, published scientific papers with them. People would sometimes refer to the "Tietäväinen School". Tietäväinen was one of the authors of the *Handbook of Coding Theory*.

In Finland Tietäväinen worked in various research projects of the Academy of Fin-

land. Coding theorists were involved in the 1990s in the Top Group of computer science and discrete mathematics. Tietäväinen's profound knowledge and international contacts were invaluable.

Tietäväinen was an excellent lecturer, both in small seminars and before a large audience. He looked out for his students, some of the more advanced ones became his good friends. He enjoyed guiding doctoral students. All of them have had good careers, some as university professors.

Colleagues remember Tietäväinen as a solid, jovial person who was also liked in

his administrative roles, such as faculty dean and institute chairman. On the occasion of his 50th birthday, a Festschrift entitled *The Very Knowledge of Coding* was published. "The Very Knowledge" could be translated as "Aimo Tietäväinen". When he turned 60 in 1997, a celebratory issue of the journal *Applicable Algebra in Engineering, Communication and Computing* was published.

After his retirement in 2000 Tietäväinen continued his work and interest in research, as well as his contacts with colleagues and friends.

*Tauno Metsänkylä*