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Alison Harcourt (Doig)

STEM field(s): Mathematics (Statistics)
Born: 1929, Colac, Vic (Gulidjan Country)

'Take the subject that you like and the one that appeals to you and work at that, and if that's mathematics, do it. There's a great joy in mathematics!'

- Mathematical optimisation and statistics pioneer.
- Attended country state schools and an independent girls' school.
- One of only two women in 1947 to enrol in a combined BA (Mathematics) and BSc (Physics) at the University of Melbourne.
- Completed an MA (Statistics) in 1958.
- Worked on the world's first generation of digital computers.
- Pioneered the "Branch and Bound" algorithm for solving optimisation problems. Landmark 1960 paper intentionally published as 'AH Land and AG Doig' so as not to highlight that the authors were women.
- "Branch and Bound" forms the basis of much modern computing and is the backbone for modern programming in fields such as logistics, transportation, telecommunications, GPS and cancer treatment planning.
- Collaborated to define poverty line in the late 1960s. Co-author of 1970 report on poverty in Melbourne, which formed the basis of the landmark 1970s Henderson Commission of Inquiry into Poverty in Australia. Updated estimates of the poverty line are still used today, for example by the Melbourne Institute.
- Research with Malcolm Clark on the randomisation of candidates on ballot papers led to electoral law changes to help make all Australian elections fairer.
- Retired from teaching aged 90.
- Honorary Doctor of Science from the University of Melbourne (2018).
- 2019 Senior Victorian Australian of the Year.
- Made an Officer of the Order of Australia (AO) for distinguished service to mathematics and computer science in 2019.
- Loves the Australian bush (was a keen rogainer), music and reading.