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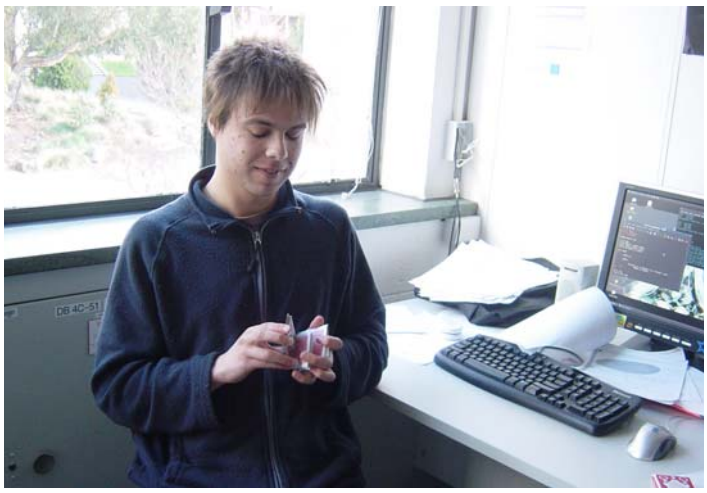
The Maths of Card Shuffling

People I know often wonder how I can make a serious maths thesis out of decks of playing cards. The answer is why studying maths is so great.



The maths I'm working with has been used for designing sound systems, web search engines, stock market trading systems, quantum mechanical theories and all kinds of other things I've never heard of. The fact I'm using it for card games and card shuffling makes no difference. So not only can mathematicians study just about anything, by studying just about anything we open up possibilities in all kinds of science.

Studying maths doesn't restrict you to a desk job, either. Last summer I was driving around Tasmania taking measurements of magnetic fields and thinking up physical and statistical models to apply to the data I was collecting. It's one thing to solve standard problems from textbooks and another thing to be given a problem, a box of equipment and a salary and be asked to find a solution somehow. A career in research never stays boring for long.

I started off university doing a mix of physics, maths, chemistry and computer science. Over the next few years I narrowed that down to mathematics and physics. That's a very straightforward combination but I've seen other students do all kinds of mixes - like electromagnetism and law - and these are people the world is needing more and more nowadays.

As I said, my honours thesis is about decks of playing cards. I study card shuffling and games, both by writing computer simulations and by using old-fashioned mathematical logic. Of course, I like to try things out on a real deck of cards once in a while, too.

I've never regretted taking up science. Studying science means you're always learning things you'd never learn elsewhere. Would you have guessed that some popular shuffling techniques would need to be repeated thousands of times to shuffle a deck properly?

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