

## **Quant**

I graduated in 1995 from the math department of the UvA. From early 1996 to 2000 I was a.i.o. in algebraic number theory under the supervision of Peter Stevenhagen. During this time I had a brief stint as visiting research fellow at the University of Singapore. Since my thesis defense in 2001 I've been working as a "quant" at AOT, a firm that trades options and other financial derivatives.

As an algebra student, I wasn't familiar with options never mind the role of "quants" in the options business, so perhaps I should start there. Options are bits of paper that guarantee its holder to a minimum or maximum price for selling or buying something at some future date. For example, if you were a European company scheduled to receive a large payment in Japanese yen in two months time, you might buy an option contract to secure a minimum exchange rate to protect the payment's value in Euros. In other words, options are like insurance contracts in that they allow people to buy and sell risk. Just like normal insurance, the risk buyer who provides the guarantee requires the risk seller to pay a premium. In insurance companies actuaries determine how big the premium needs to be to compensate for a given risk. Quants or quantitative analysts are the actuaries of the option trade.

The company that I work for, AOT, is a market making firm which operates on various financial exchanges such as the options floor in Amsterdam. Unlike a broker who earns a commission by executing orders on behalf of clients or a fund manager who invests other people's money, a market making firm trades its own capital at its own risk. The market maker's role in financial markets is that of an intermediate trader or middle man. The middleman earns a living by buying inventory cheaper than he sells it for. He provides liquidity in a market where it could otherwise take too long to match potential buyers to potential sellers and is compensated for the risk of holding inventory.

The projects in the quant group at AOT fall broadly into two categories: trading strategy and theoretical pricing models. My main project is in the pricing area (i.e. solving partial differential equations), though I've also done some software testing, written a manual, briefed practitioners on the contents of academic research papers. I enjoy what I am doing immensely. Although quite rigorous and precise, it's impacted by events in the real world.

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