

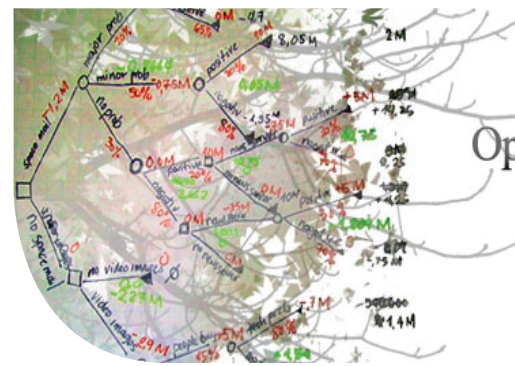
Career Spotlight

Operations Research Analyst

“BYU’s math department launched me on a very exciting career in operations research - the application of mathematics to business management.”

“I deal with the modeling, mathematical theory and algorithmic aspects of inventory control, production planning, production scheduling, forecasting and capacity management. It has been fascinating to work with a mixture of very small, very large, and medium-sized companies.”

- Robin Roundy; BS Math BYU



Be Creative.
Operations Research Analyst

Operations research analysts are involved in top-level strategizing, planning, and forecasting. They use advanced techniques from mathematics, science, and engineering to make better decisions and to solve problems. These analysts help to allocate resources, measure performance, design production facilities and systems, manage the supply chain, set prices, coordinate transportation and distribution, and analyze large databases. They also have been used in wartime to effectively deploy radar, search for enemy submarines, and get supplies to where they are most needed.

EDUCATION

Operations research analysts must obtain the minimum requirement of a bachelor’s degree. Many schools offer bachelor’s and advanced degree programs in operations research, but it is common for analysts to have degrees in other quantitative fields, such as computer science and mathematics. Most employers do prefer applicants with a master’s degree and computer programming skills. Keeping up to date with technological advances and improvements in analytical methods is essential.

WHEN MATH IS USED

Operations Research Analysts use math to solve a wide variety of problems. Their primary task is to formulate and apply mathematical modeling and other optimizing methods using a computer to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. Other tasks include breaking systems into their component parts, assigning numerical values to each component, and examining the mathematical relationships between them. Operations research analysts also use math as they formulate mathematical or simulation models of problems, relating constants and variables, restrictions, alternatives, conflicting objectives, and their numerical parameters.

MATH REQUIRED

- College Algebra
- Trigonometry
- Calculus I, II, III
- Advanced Multivariable Calculus
- Linear Algebra
- Advanced Linear Algebra
- Linear Programming

Low-end Salary: \$40,620/yr

Median Salary: \$71,950/yr

High-end Salary: \$126,000/yr

POTENTIAL EMPLOYERS

Many operations research analysts in the Federal Government work for the Department of Defense, and others in private industry work directly or indirectly on national defense.

JOB OUTLOOK

Employment of operations research analysts is expected to grow by 15 percent between 2010 and 2020, about as fast as the average for all occupations. As technology advances and companies further emphasize efficiency, demand for operations research analysis should continue to grow.

FACTS

At amusement parks, operations research can come in handy to let you skip the lines for the most popular rides. For Epcot’s Mission Space ride in Disneyworld, for instance, you can join a “virtual queue” using the FastPass system introduced in 1999. A computer issues a pass that tells you when to claim your spot at the front of the line. But it doesn’t just tell you to come back after an arbitrary length of time, say, an hour and 15 minutes. Rather, to calculate a return time for each guest in the face of constantly shifting waiting times, the virtual queue’s software takes into account how many people are standing in the real line, how many are already in the virtual queue, and how many of each group the park wants to admit each time the ride opens up.

CITATIONS

<http://job-descriptions.careerplanner.com/Operations-Research-Analysts.cfm>

http://www.boston.com/news/globe/reprints/062704_postrel/

<http://www.bls.gov/ooh/Math/Operations-research-analysts.htm>