Internship Opportunities in Applied Computer Science and Mathematics

Company Profile:

Merck & Co., Inc. is a leading research-driven pharmaceutical manufacturing company. Merck discovers, develops, manufactures and markets a broad range of innovative products to improve human health. Merck works to improve quality of life and lower overall health-care costs. In addition to delivering these benefits to society, Merck is committed to providing superior return for shareholders and a stimulating work environment, as well as competitive salary and benefits, for employees.

Merck Research Laboratories (MRL) is the division within Merck that provides the breakthrough research and development needed to produce new medicines. The traditional combination of biology and medicinal chemistry seen in pharmaceutical research is now being augmented by other quantitative sciences such as applied mathematics and computer sciences as the need for modeling, machine intelligence, and pattern recognition has grown. Pattern recognition and machine intelligence are needed to analyze data generated by high throughput assays, gene and protein data generated in the public and private sectors, and medical imaging. Early interest in modeling/simulation is observed in work on molecular models and chemical kinetics of drugs in living organisms. Recently, modeling is being used as a tool for describing other biologically complex systems such as the metabolism and trafficking of the amyloid-β protein in Alzheimer’s disease or epitope identification in immunology.

Position Descriptions:

Computational science and mathematics research positions in MRL include work in the areas of simulation, mathematical modelling, pattern recognition, parameter estimation, knowledge representation, discrete algorithms, optimization, software development, computational biology and related areas. We anticipate having positions available at the intern level for 2006.

Requirements:

Intern positions require a participation in a BS, MS, or PhD degree program in Mathematics, Computer Science or related areas. All positions require knowledge of one of the following: C/C++, Java, R, Mathematica, and/or MATLAB. Areas of expertise include but are not limited to discrete and numerical algorithms, complexity theory, knowledge representation, machine intelligence, bio-informatics, computational biology, mathematical analysis, stochastic processes, differential equations, mathematical programming, scientific software engineering, parallel algorithms, and mathematical modelling. Desired (but not required) knowledge and/or experience encompass chemistry, biology, genetics, biochemistry, or pharmacology.

Location:

West Point, Pennsylvania (25 miles north of Philadelphia)
Rahway, New Jersey (20 miles southwest of New York)

Contact:

Robert B. Nachbar, nachbar@merck.com, 732-594-7795
Jeffrey R. Sachs, jeff_sachs@merck.com, 732-594-0623