Kwong Hiu Yung, PhD

khyung@cs.stanford.edu 703-485-6450

http://www-db.stanford.edu/~khyung/resume.pdf

4427 Rockcrest Drive; Fairfax, VA 22032-1821; USA
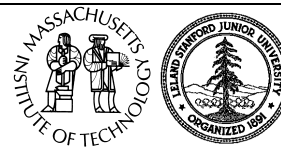
Science

Chief Scientist   IT.com Vertical Search   11/2005–present

Orchestrate research and engineering on vertical search, integrating informational retrieval, machine learning, and natural language processing. Architect search engine and deployment system. Apply search technology to government web, patent database, and email network. Market technology and negotiate business opportunities for startup company.

Privacy Scientist   IBM Almaden Research Center   09/2004–10/2005

Explored privacy issues in data storage and information exchange. Analyzed current infrastructure and architecture used in entity resolution. Proposed machine learning algorithms to improve accuracy and to preserve privacy.

Database Scientist   IBM Computer Science Research   06/2002–09/2002

Helped research team to improve database query optimizer. Proposed statistical algorithm to use previous query results for estimating cardinalities of intermediate tables. Implemented basic infrastructure for new system.

Engineering

Scientific Engineer   Atma Software Corporation   06/2000–09/2000

Developed novel statistical ranking methodologies to help buyers choose suppliers from B2B commerce marketplace. Applied mean-variance portfolio analysis to formulate optimal bill of materials. Designed recommender system algorithms and other advanced mechanisms to support buyers. Devised strategies to handle missing supplier data and to simplify software user experience.

Telecommunications Consultant   Lucent Technologies   06/1997–05/1998

Provided complete billing software solutions to leading telecommunications companies throughout the world. Designed, coded, and tested new Web-based customer care application. Integrated HTML, Perl CGI, C API, and SQL code to create browser interface to underlying database operations.

Technology

Programming languages: **C**, **C**++; Java, Perl, HTML, SQL; Lisp, Pascal, and Fortran.
Operating systems: **UNIX** (Solaris, Linux, BSD), Windows (2000, XP), and Mac OS.
Software: **EMACS**, TEX, LATEX; **Matlab**, S-Plus, Excel; DB2, Oracle, SQL Server.

Education

Stanford University   San Francisco, California, USA

GPA 4.0/4.0   Statistics PhD in Machine Learning, Statistics MS   09/1998–12/2003
GRE test scores: mathematics 990/990, quantitative 790/800, and analytical 770/800.
Member of **ACM**, **ASA**, **IMS**, **Sigma Xi**, and **New York Academy of Sciences**.

Massachusetts Institute of Technology   Boston, Massachusetts, USA

GPA 3.9/4.0   Math and Computer Science doctoral studies   09/1995–12/1996
GPA 3.9/4.0   Math BS, Physics BS, Chemistry minor   09/1991–05/1995
Received **MIT Class of 1938 Scholarship** for distinguished excellence in education.

Research

Intrusion Detection Stanford Computer Science 01/2001–12/2003
Advisors: Jerome H. Friedman (statistics), Jeffrey D. Ullman (computer science). Invented statistical methodology to detect intruders in a computer network. Identified connection chains used by computer hackers to evade detection. Applied machine-learning techniques to identify masquerading users. Designed update algorithms to correct classifiers for concept drift.

Molecular Simulations MIT Chemical Engineering 01/1992–05/1994
Advisor: Jonathan G. Harris (chemical engineering). Used statistical mechanics principles to calculate thermodynamic properties of liquids, directly from molecular potentials. Tested molecular models of water and of carbon dioxide. Developed full-featured Monte Carlo simulation.

Dissertation

Doctoral coursework in database theory, data mining; stochastic processes, simulations; mathematical programming, combinatorial optimization; algorithms, complexity theory.

Kwong H. Yung. **Update Algorithms for Masquerade Detection**. *Stanford University Statistics Doctoral Thesis*. December 5, 2003.

Kwong H. Yung. **Monte Carlo Simulation of Argon in Gibbs Ensemble Using Combined Volume and Particle Exchange Moves**. *Massachusetts Institute of Technology Physics Bachelor Thesis*. May 6, 1994.

Publication

Named **Best Student Paper** of ACNS 2003 for insightful research and presentation.

Kwong H. Yung. **Using Self-Consistent Naive-Bayes to Detect Masquerades**. *Springer-Verlag Lecture Notes in Computer Science: Pacific Asia Knowledge Discovery and Data Mining*. Proceedings of the PAKDD 2004 Conference. May 27–28, 2004.

Kwong H. Yung. **Using Feedback to Improve Masquerade Detection**. *Springer-Verlag Lecture Notes in Computer Science: Applied Cryptography and Network Security*. Proceedings of the ACNS 2003 Conference. October 16–19, 2003.

Kwong H. Yung. **Detecting Long Connection Chains of Interactive Terminal Sessions**. *Springer-Verlag Lecture Notes in Computer Science: Recent Advances In Intrusion Detection*. Proceedings of the RAID 2002 Conference. October 16–18, 2002.

Jonathan G. Harris and Kwong H. Yung. **Carbon Dioxide's Liquid-Vapor Coexistence Curve and Critical Properties as Predicted by a Simple Molecular Model**. *Journal of Physical Chemistry*. Vol **99**, pp 12021–12024. August 3, 1995.

Leadership

Fluent in **Mandarin**, **Cantonese**, **English**; proficient in **Spanish** and **Portuguese**.

Teaching Assistant	Stanford Statistics	09/1998–12/2001

Taught statistics theory, probability theory, stochastic processes, time series analysis.

Systems Administrator	Stanford Residential Computing	08/1999–06/2001
Academic Computing Advisor	Stanford Committee	09/1999–06/2000
Government Council	Stanford GSC	06/1999–09/1999
Volleyball Captain	MIT Intramural Volleyball	02/1996–05/1996
News Reporter	MIT *The Tech* Newspaper	02/1996–05/1997
Club President	MIT Society of Physics Students	09/1993–05/1995
Pledge Educator	MIT Fenway House	09/1992–06/1994
Undergraduate Advisor	MIT Academic Advising	09/1992–06/1994