

Jan Galkowski

Consulting Data Scientist, Ecoinformatics

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Experience

Akamai Technologies

Statistician, Quantitative Engineer

CAMBRIDGE, MA

July 2007 – March 2020

In support of Akamai's Internet business and customer-empowering products, I worked in Custom Analytics, studying ways to characterize the Internet, its users and business customers. I served as a principal investigator for customer-sponsored research, focusing on particular aspects of the Internet of interest to them.

Much of this analysis is statistical, both aided and encumbered by large data sets, with particular attention paid to quantitative detail as well as sensible efficiency. High level approaches to problems often proved to be the most cost effective, particularly solutions using combinations of Python 3 and the statistical programming language, **R**.

Typical tasks:

- Constructed random forest classifiers for identifying types of IP addresses.
- Classified sources of Internet traffic using dictionaries of intraday temporal behavior series from time series.
- Used state-space models with time series to discern preference patterns for Web visitors and media watchers.
- Recovered associations between video manifests from viewing records permitting their reliable determination as being successive episodes in a series, with no other information.
- Devised methods for frustrating attempts at data mining in order to protect and promote privacy.
- Inferred Web site popularity from DNS cache access series.

Westwood Statistical Studios

Owner, Data Scientist, Ecoinformatics

WESTWOOD, MA

January 2013 – Present

Statistical consulting with applications of machine learning. Typical projects:

- Carbon sequestration trade-offs between solar energy deployment and age-dependent forest and field sinks.
- Blind source recovery of contributions to solid waste streams.
- Constraining and modeling latent subterranean sources of groundwater for drinking wells as functions of ambient precipitation and regional drawdowns.
- Reanalysis of hurricane tracks for non-mechanistic prediction of risks.
- Field surveys.

(Miscellaneous contract employment)

Database Developer-Analyst; Consulting Test Engineer *January 2004 – December 2006*

- Contract database developer, Cornell University Alumni Relations, Ithaca, NY.
- Contract test engineering, Sensis, Syracuse, NY.

Westinghouse Nuclear Automation

WINDSOR, CT

Consulting Test Engineer

February 2003 – December 2003

Contract position at this global energy technology and services company

- Certified as test engineer for automation by the U.S. Nuclear Regulatory Commission.
- Applied embedded software to verify nuclear reactor safety controls.
- Built rapid test development and automation software which allowed quick comparison between truth models and installed C code, providing problem isolation.

This company has recently been acquired and, unfortunately, the unit has filed for bankruptcy protection.

(Miscellaneous contract and full-time employment)

Web Developer; Test Engineer; Database Developer; Programmer-Analyst *March 1996 – December 2002*

- Full-time developing database-backed Web sites, Spider Graphics Corporation, Ithaca, NY.
- Full-time Aviation test engineer, Digicomp Research, Ithaca, NY.
- Contract database and Web developer, **Aetna USHealthcare**, Middletown, CT.
- Full-time programmer-analyst, Cornell University Information Technologies.

Loral Federal Systems

OWEGO, NY

Advisory Engineer

April 1994 – December 1995

Formerly IBM Federal Systems, this provider of government software and radar systems was purchased by Loral in 1993

- Devised major portion of total system acceptance test of large surveillance measures (“ESM”) defensive electronics set.
- Devised innovative ways of using existing signal simulators to provide additional important test capabilities.

IBM Federal Systems Division

OWEGO, NY

Advisory Engineer/Scientist

May 1976 – March 1994

Embedded systems engineer for this government systems division of IBM, executing integration and testing of avionics.

- Part of elite group troubleshooting projects behind schedule and under stress.
- Co-developed PC-based business Forms Designer program which sold 5,000 copies.
- Awarded U.S. Patent 4,803,651, issued 2/7/89, for software coding systems.
- Sent by IBM for additional graduate study in electrical engineering at Cornell University.
- Developed key supporting tools (simulators, compilers, assemblers) for military platforms and NASA Space Shuttle.
- Granted IR&D funds to conduct applied research in functional programming.

Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CAMBRIDGE, MA

S.M., Electrical Engineering and Computer Science

August 1974 – May 1976

Research assistant and teaching assistant at the MIT Artificial Intelligence Laboratory, advised by Professors Patrick Winston, David Marr, and Berthold K. P. Horn

PROVIDENCE COLLEGE

PROVIDENCE, RI

B.S., Physics

September 1970 – May 1974

Extensive work supporting scientific investigations using advanced programming of problems, some numerical and some symbolic. Member, *Ecology Action for Rhode Island*.

Skillset

- Interdepartmental data science consultant, statistics lecturer, problem solver.
- Bayesian data analysis and experiments using conjugate priors, MCMC and Gibbs sampling, hierarchical models, slice sampling, approximate Bayesian computation, time series, random forests, and regression trees.
- Quantitative programming with **R** (for statistics, optimization, including some *SparkR*), and data reduction and analysis of gigabyte datasets with a variety of tools as available in the environment, with concurrent **R** (via `mc1apply`), Python 3 (Anaconda) and ANSI C being preferences.
- Project planning, project management, \LaTeX documentation.
- Test-oriented software development with a variety of imperative and functional languages.
- Database design and development, strong SQL (MySQL, PostgreSQL, Oracle), HQL, Neo4j.
- Data warehouses, ETL development and maintenance, TDWI certification 2002.
- Systems test engineering for airborne platforms and nuclear power.

Organizations and Outside Interests

- Ecological Society of America
- New England Statistical Society.
- Personal scholarship in statistics, climate science, ecology, urban botanical ecology.
- American Statistical Association.
- International Society for Bayesian Analysis.
- Hobbies include running, microphotography, reading.
- Climate, science, and statistical activism.
- American Association for the Advancement of Science.
- Green Congregation Committee, First Parish in Needham, Unitarian Universalist.

