

# Michael O. Church

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<https://github.com/michaelochurch>

## EXPERIENCE

- *Technologies*: Scala, Clojure, Ocaml, Python, C, Haskell, SBCL (Lisp), SQL, Linux, Amazon Web Services, Emacs.
- *Specialties*: functional programming, machine learning, system design. Have implemented backpropagation neural networks, continuously-updating maximum likelihood estimators, and genetic algorithms.

### Associate, Morgan Stanley

New York, NY -- 2012 to Present

- Modified Scala's build tools to provide analytics on dependencies for a large, existing Scala program.
- Developed tools in Scala and Python for evaluating various database products for company-wide risk data store.

### Self-employed Consultant

New York, NY -- 2011 to Present

- Led internal course on Scala, which included writing lessons and exercises, for New York-area startup.
- Developed Book Club program for a New York-area startup's recruiting efforts.
- Designed incentive structure of, and performed statistical analysis for, a web game with about 50,000 players per week.

### Software Engineer, Google

New York, NY -- 2011

- Developed static-analysis tools for a configuration language used for distributed computing.
- Fixed hard-to-reproduce bugs over a year after they were originally reported.

### Software Engineer, Kloud.co

New York, NY -- 2008 to 2011

- Used Clojure, MySQL, and Amazon Web Services to build graph-based, distributed database with individual and linked permissions at the level of single nodes and edges.
- Responsible for system administration, debugging tools, and analytics for this database system.

### Quant (Ocaml Developer), Jane Street Capital

New York, NY -- 2007 to 2008

- Using maximum likelihood estimation, developed real-time tools to detect delays and errors in live market data.
- Designed, built, and deployed programmatic implementation of a trading strategy earning over \$20,000 per day.
- Taught course in game design and game theory as part of summer intern education program.

### Analyst, Princeton Brand Econometrics

New York, NY -- 2006 to 2007

- Analyzed time series to predict market share of both new and existing drugs.
- Applied genetic algorithms and abstract algebra to experimental designs, reducing costs by over 40%.

## EDUCATION

### Carleton College, B.A. in Mathematics

Northfield, MN -- 2001 to 2005

- GPA: 3.9, 4.0 in-major, 3.9 in computer science coursework. Elected to Phi Beta Kappa.
- Top-200 finish in Putnam math contest all four years, top-100 twice with Honorable Mention in 2004.
- Coursework included programming languages, artificial intelligence, computational game theory, number theory, real analysis, abstract algebra, logic and methods of proof, non-Euclidean geometries and combinatorics.
- Goldwater Fellowship recipient, 2004.
- Attended Budapest Semesters in Mathematics, selective study-abroad program in Hungary, 2003.

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