Michael Brock

Insight, Inc.

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PROFESSIONAL SUMMARY

Engineering mathematician and data scientist. 25 years stock market research, modeling, trading, and discovery of new predictive principles. 35 years analysis and modeling of nonlinear dynamic systems. 10 years custom predictive models for government and private industry.

KNOWLEDGE-BASED SKILLS

Stock Trading	Portfolio management	Stock price prediction
Proprietary models	Matlab	Algorithm design
Digital filter design	Frequency domain	Fourier transforms
Applied mathematics	Data Visualization	Complex numbers

EXPERIENCE

President	Insight, Inc	Miami, FL	Nov 2018-Present

Developing systematic algorithm to predict security prices. First principles. Scalable from intraday time frame to quarterly time frame. Return rates 1%/day (10X/year) intraday scale to 22%/year or more quarterly scale. This baseline is a "minimum viable product" to demonstrate the concept. Additional alpha-stage prediction methods have been derived from first principles, to be implemented after launch. Business partner is computer expert with fully functional trading platform in use over 16 months. Hedge fund manager in Coral Gables is interested in project. Professor at Stanford (*skilled in frequency domain methods*) is intrigued with the principles.

Sabbatical	Home	Miami, Fl	Jan 2015-Present

Research Fourier transforms, Brownian motion, and complex number theory for predictions.

Sabbatical	Home	Scottsdale, AZ	Nov 2011-Sep 2014

Research and software development to create low lag filter classes.

President	Large Cap Movements, LLC	Flagstaff, AZ	Apr 1999-Nov 2011

Founded small trading company. Designed all software. Traded NYSE common stocks roughly 5 to 20 day holding period from Feb 2004 to Jun 2009 (5 years). Return of 62% per year from 2005 to July 2007 (2.5 years). Approximately 120 trades. Schwab account. Portfolio grew from $16,000 to $176,000 in 2.5 years (400% per year – investors added more funds). Filter designs were not strong enough for the mortgage crisis. We shut down the company.

Sabbatical   Home   New Orleans, LA   Apr 1996-Apr 1999
Full-time research of stock market dynamics. Literature searches, review of the theories, historical time series analysis, theorem testing, chaos models, Fourier methods, software development.

Systems Engineer   Minerals Management Service New Orleans, LA   Jan 1995-Mar 1996
Custom GIS modeling for US government, MMS. Offshore Leasing Operations, Gulf Region.

GIS Specialist   Boise National Forest   Boise, ID   Apr 1991-Dec 1994
Custom GIS maps, models, and databases for management. Collaborations, presentations.

Software Developer   Honeywell   Phoenix, AZ   Apr 1990-Mar 1991
Coded proprietary modeling package with a Ph.D. Sold worldwide. Acquired 8 years later.

Dynamics Engineer   Lockheed Systems   Burbank, CA   Apr 1989-Mar 1990
Predicted dynamic properties for proposed aircraft. All calculations. Issued documents.

Dynamics Analyst   McDonnell-Douglas   Long Beach, CA   Apr 1987-Apr 1989
Vibrations, structural responses for three engineering departments. Co-author, final report.

Flight Test Analyst   Grumman Aerospace   Calverton, NY   Sep 1984-Apr 1987
Vibration, structural responses, and flutter analysis. Advanced modeling and prediction.

Senior Engineer   Rockwell International   El Segundo, CA   Sep 1983-Aug 1984
Vibration, shock, and acoustic analysis of B1-B bomber aircraft. Author, wind tunnel reports.

EDUCATION

Northrop University – B S Mechanical Engineering   Westchester, CA

PUBLICATIONS

MathWorks Newsletter   "HMPC Identifier Determination of Control Coefficients"   Jan 1993
NASA Final Report, CR-181897   "UHB Demonstrator Flight Tests and Analysis"   Oct 1989
Grumman Flight Test Group, Calverton, New York   "How to Use TASKX"   Jun 1986
AIAA-86-9737   "X-29A Flutter Data Analysis by Advanced Methods"   Apr 1986

NUMERICAL MOMENTS

Kaibeto Boarding School   Navajo Reservation   Kaibeto, AZ   Jul 2012
Obtained $28.6 million in Federal funds to replace a K-8 school on Navajo reservation.

Found errors in scholars' data: http://schwert.ssb.rochester.edu/mstock.htm   Dec 1997