

Thor Whalen

CURRENT POSITION: Director of Machine Learning

DEGREE: Mathematics Ph.D. & Computer Science Masters.

Life: Born in the U.S., raised in France (mostly), Italy and Germany. US citizen.

Work: Consultant & Analyst: Data Science, Mathematics, Statistical Modeling, Optimization, Computer Science

Natural Languages: English, French (bilingual), Italian (working knowledge), German (conversational)

Computing Languages: Python Expert. *Historical:* C, Matlab, R, Java, VBA. *Prehistorical:* Basic, Pascal, Lisp

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WORK

I have worked primarily as an independent machine learning consultant and trainer since year 2000. My work required a cross-functional approach to problem solving in a variety of sectors. It usually started with formalizing what the C-levels wanted, defining and measuring objectives, developing models, and finally working with existing dev teams to get the solutions integrated.

I co-founded OtoSense, a sound recognition company. We sold it to Analog Devices in 2018 and I have been working with them since then, first as a Director of Machine Learning, focused on open-source tools to facilitate collaboration for the development of end-to-end frameworks and platforms for signal ML.

Analog Devices (Semiconductors)	2018-present	Director of Machine Learning (Analog Devices bought OtoSense) - Managing R&D in IoT data machine learning and platforms - Develop tools to accelerate end-to-end ML POC development
OtoSense (Sound Recognition)	2016-2018	CTO and co-founder of startup - Data Science for sound recognition AI systems - Managed backend and frontend projects for sound recognition tools
TagCommander (Tag Management System)	2014-2016	Senior Data Scientist - Sales Trajectory Analysis - Multi-channel Attribution
Expedia (Hotel Booking)	2011-2014	- Search Engine Marketing Optimization - Supply and Demand granularization, alignment, and pricing - Semantic Analysis and Consumer Behavior

From 2001-2011 I worked as an independent consultant. Below is a list of companies I worked for, and a short work description. The time periods of the projects—neither contiguous nor separate—will be omitted for readability.

Sanoma (Media)	- Examined online marketing process and strategies, integration of data science teams - Presented algorithms to improve search marketing
Easyvoyage (Fare comparator)	- Airfare forecasting - Data Analysis
Dotdotdot (Mobile Reader App)	- Natural language processing - Document fingerprinting
First Affiliation (Internet Marketing)	- Designed and developed automatic targeting and campaign optimization system for affiliation and direct mail marketing - Time series analysis and forecasting of various marketing variables - Search engine marketing: Forecasting, risk management and bid optimization
Scentric (Data Management)	- Research and development in data management and information retrieval. - Developed general duplicate detection system -- wrote and filed patent. - Automatic document classification

iViVity (Storage Management and Networking)	<ul style="list-style-type: none"> - Improved existing methods for RAID systems and CRC calculations - Wrote patent (US patent #6,823,425) on novel erasure codes for RAID systems - Analyzed hash functions' effectiveness and (circuit design) optimality - Conducted workshops on diverse mathematical techniques
KM Consulting (Knowledge Management)	<ul style="list-style-type: none"> - Conducted workshops on data mining, forecasting, artificial intelligence, expertise systemization and knowledge extraction. - Worked on expressing knowledge management problems in mathematical form
Metron (Scientific Consulting)	<ul style="list-style-type: none"> - Developed theory and software tool for distributed inference in Bayesian networks - Researched and tested Monte Carlo methods for multiple target tracking
IKON (now Ricoh) (Office Solutions)	<ul style="list-style-type: none"> - Modeling incentive analysis and alignment - Wrote software tool for compensation plan analysis
Nursing Home Quality (QIS experts)	- Developed an approach to assess precision and optimize risk and cost during QIS (quality indicator score) facility quality assessment. Developed simulations.

Other miscellaneous projects include

Online poker betting patterns	Identification information of mouse movements and keystroke patterns
Auction dynamics	Betting (number combination) choices of national lottery
Social network structure of blogs	Emergence & spread of new words and expression in the blogosphere
Music information retrieval	Addiction patterns and dynamics

DEGREES / EDUCATION

Ph.D. in Mathematics	Emory University	2003
M.S. in Computer Science	Emory University	2003
Licence de Mathématiques (M.S. in Math)	Université de Nice Sophia Antipolis, Nice, France	1996
D.E.U.G. A MPM (B.S. in Math/Physics)	Université de Nice Sophia Antipolis, Nice, France	1994
Graduate Studies	Technische Universität Berlin, Germany	1997-1998
Classical and Jazz musical studies	Conservatoire National de Région de Nice, France	1985-1995

TEACHING EXPERIENCE

Taught in several Universities (namely, Illinois State University, Emory University, Johns Hopkins Center for Talented Youth) across the U.S.A & various workshops in various subjects relevant to the client. Subjects include:

Marketing mathematics	Mathematics for Computer Science	Exploiting uncertainty
Probability and Statistics	Advanced data analysis	Optimizing in complex settings
Theory of Computing	Data Science in Python	Data representation and indexation

PATENTS & ACADEMIC ARTICLES

Below is a non-exhaustive list of publications.

1. *Syntactic system for sound recognition*, w/ Christian, US Patent #US20180268844A1
2. *Sound-recognition system based on a sound language and associated annotations*, w/ Christian, US Patent #US20180254054A1
3. *System and method for implementing advanced RAID using a set of unique matrices as Coefficients*, w/ Gosh, Jain, US Patent #6,823,425 (assignee: iVivity, Inc.)
4. *Intelligent General Duplicate Management System* w/ Kurande. US Patent 2007/0050423 (assignee: Scentric, Inc)
5. *Measuring Discontinuity in Binary Longitudinal Data*, w/ Miriam Boeri: Sociological methods & research. 43(2) (2014)
6. *On H-immersions*, w/ Ferrara, Tansey, Gould: Graph Theory 57(3) (2008)
7. *Subdivision Extendibility*, w/ Gould: Graphs Combin. 23(2) (2007)
8. *Distance between two k-sets and path-system extendibility*, w/ Gould: Ars Combinatoria 79 (2006)
9. *On H-linked Graphs: Unifying connectivity*, w/ Ferrara, Tansey, Gould: Graphs Combin. 22(2) (2006)
10. *Edge-disjoint Hamiltonian cycles in bipartite graphs*, w/ Ferrara, Tansey, Gould, Discrete Mathematics 309(12) (2009)
11. *Pan-k-linkage in dense graphs*, w/ Gould, Powell, Wagner: Discrete Mathematics 309(10) (2009)
12. *Irregularity Strength of Digraphs*, w/ Ferrara, Gilbert, Jacobson: Discrete Mathematics 309(19) (2009)