

# Steve Schmidt

## Quantitative Engineer

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### TECHNICAL SKILLS

*Languages:* C, C++ (MPI, OpenMP, CUDA, ZeroMQ), Python, Unix, Scripting  
*Software:* Gurobi, MATLAB, MAPLE, IDA, Wireshark  
*Databases:* MongoDB, PostgreSQL, MySQL, MS SQL Server, SAP Business Objects, IBM COGNOS  
*Projects:* Neural Networks, Applications of SVD & PageRank, Classifiers (Entropy, Information Theory), Decision Trees, Regression, K-M/M, KNN & EM models, DIVVY Bike Data Analysis Challenge, popular functional speed test coding & analysis on large clusters (University of Chicago MIDWAY Cluster), MIRA (Argonne)

**Web:** [www.theCprogramminglanguage.com](http://www.theCprogramminglanguage.com) **GitHub:** <https://github.com/stvschmidt>

### Professional Experience

#### **Senior Engineer II - Raytheon (Centers of Innovation - SI Govs), 2015-Current**

- Vulnerability research & reverse engineering
- Research in statistical methods, information theory, artificial intelligence and machine learning
- DARPA Grand Challenge Finalist (Deep Red - 2016)
- Low-level architectures (x86, ARM, MIPS, etc), operating systems (Linux, Windows, OS X, etc.), network communications, malware, mobile, software, (binaries, source code), hardware, embedded systems & cryptographic research
- Software engineering of tools, systems, extensions for RE/VR & autonomous systems

#### **Algorithm Developer - Federal Communications Commission (NCI, Inc.), 2014-2015**

- Engineer processes to create simulations & heuristics for using commercial optimization solvers to find quicker feasible solutions to NP-hard integer programming problems (operations research)
- C/C++/Python numerical programmer developing code base to research problem specific graph structures (cliques, MST's, connectivity, et al) to create cuts, constraints and branching strategies
- Develop distributed system architecture & performance code to best utilize computational resources
- Implement data mining/machine learning techniques for analysis in empirical data to support & improve heuristics in generating constraints, branch priorities or identifying graph attributes
- Research scientist studying the impact/validation of academic papers submitted in public notices on behalf of major corporate organizations as viable options for 2016 Spectrum Clearing Auction

#### **High Performance Computing Practicum Research - Argonne National Laboratory, 2014**

- Research Project: "Developing Efficient Methods For Parallel Data Redistribution On Hybrid Architectures", Advisor: Dr. Andrew Siegel Advancing performance/analysis of the C/MPI based application library, The Memory-Aware Data Redistribution Engine (MADRE) (<http://vsl.cis.udel.edu/madre/>)
- Studied integration of OpenMP into MADRE Library for shared memory analysis, Pinar-Hendrickson/ Cyclic Scheduler Algorithms analysis for varied input maps, varied memory constraints

### **Director of Enterprise Business Intelligence - Maritz, Inc, 2011-2013**

- Lead project manager over internal initiative to develop single data warehouse environment, designed ETL's to Business Objects Universe reporting suite supporting several proprietary, third party and client owned technologies
- Managed IBM Cognos, Business Objects powered business intelligence for analytics on data over Maritz/American Express & Online Meeting Management Portals
- Implemented dynamic multivariate predictive model based on revenue, spend, cost savings, processes, internal and external market factors for operations optimization
- Lead client facing information manager/business analyst responsible for client data warehousing, C-Level analysis, presentation of financial and event marketing spend for Cisco Systems, Coca-Cola, Shell Oil, Microsoft, Thomson Reuters, AT&T, MillerCoors

### **VP, Development - MeetingTrader, Inc, 2008-2010**

- Business & Strategic Marketing Plan design, implementation and \$1M venture capital funding for Technology/Software Startup
- Engineered ERD for multipurpose use as CRM, BI and user data warehouse to capture market research and spend management analysis outputting a Future Market Index (patents pending), predictive model
- Managed joint enterprising project between MeetingTrader and MGM Resorts International for proprietary marketing software Managed all functional development areas, Operations Managers, Developers, Sales and third party Marketing Agencies

## **EDUCATION**

### **THE UNIVERSITY OF CHICAGO, CHICAGO, IL**

*Master of Science in Computer Science*

*Focus: High Performance Computing & Machine Learning*

*Highlighted Courses:* Algorithms, High Performance Computing, Numerical Methods, Computational Data Analysis I & II

### **DEPAUL UNIVERSITY, CHICAGO, IL**

*Master of Science in Theoretical Mathematics*

*Focus: Algebraic Theory & Numerical Methods*

*Highlighted Courses:* Numerical Analysis I & II, Mathematical Modeling, Advanced Linear Algebra, Probability Theory, Passed Qualifying Exams (Analysis/Algebra)

### **THE WINONA STATE UNIVERSITY, WINONA, MN**

*Bachelor of Science in Marketing*

*Focus: Consumer Behavior & Market Research*

*Highlighted Courses:* Market Research, Consumer Behavior, Corporate Finance, Statistics

## **Ancillary Proficiencies & Organizations**

- DARPA Grand Challenge Finalist (Deep Red - 2016)
- Nominated for 2017 Franz Edelman Prize (Operations Research) for FCC Incentive Auction
- American Mathematics Society, IEEE Computer Society, American Marketing Association
- Client Advisory Board (StarCite, Cvent, Meetings Evolution, Inc. - Technology/SASS)
- Raspberry Pi, Arduino
- Google Analytics Individual Qualification Certificate