

Bradley Okresik

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Security Clearances: SSBI / DOD Secret



I use Matlab as my primary tool for researching, developing and testing quantitative trading systems. A background performing data analysis, modeling, simulation and algorithm development for remote sensing applications is the foundation of my approach to trading capital markets. I have a strong interest in complexity, chaos, fractal geometry, information theory, estimation, and optimization.

Work experience:

Raytheon: Space and Airborne Systems - data analyst, modeling & simulation	2003 – present
Clorox Services Company - Research & prototyping internship	2003 January
Lucent Technologies - Test engineering internship	2002 summer
US Puget Sound Naval Shipyard - Engineer	2001 summer
Butler National Golf Club - Caddie	1990 - 2000 summers
Vail Resorts - Cook	99,00,01,02,04 January

Education:

Financial markets independent study & research	2006 – 2010
University of Illinois at Urbana-Champaign	1995 - 2003
MS: Materials Science Engineering 3.84 GPA	
Two BS degrees: Electrical Engineering & Mechanical Engineering 3.58 GPA	
Minor: Mathematics	

Research and Teaching Experience:

Radar detect, identify, & track algorithm development research	2004 - Present
Signal & Image processing, estimation & information theory	
Teaching Assistantships	2000 - 2003
University of Illinois: Probability & Statics, Mechanics of Materials	
Haystack Observatory at MIT Lincoln Labs (REU/NSF)	1999 summer
Tribology research - model & measure recorder head-to-tape interface	

Computer experience:

Matlab	CUDA	Java	C/C++	Photoshop
Visual Basic	Mathematica	SQL	HP-ADS	Quark XPress
Fortran	LabView	Motorola DSP56000	Coware SPW	Dreamweaver

Hobbies/Interests/Organized Athletics:

Snowboarding, skiing, music, mountaineering, wind surfing, sailing, woodworking, glassblowing, sculpture, metal fabrication, bronze casting, audio loudspeaker design & construction, hiking, golf, fishing.
Competitive history: swimming, distance running, volleyball, tennis, marathon, triathlon, cycling.

Awards:

Chick Evans Scholarship - A four-year full tuition scholarship (University of Illinois) awarded to caddies who display excellence in leadership, character, academics, and financial need.

Colorado Outward Bound School - **Gates Leadership Scholarship**. One of 25 full tuition scholarships awarded to students that display exceptional leadership skills. I attended the school's 30-day Alpine Mountaineering Leadership Challenge Course in the San Juan Mountain Range of southwestern Colorado.

Statics	Continuum Mechanics	Analog Signal Processing	Electromagnetics I & II	Differential Equations
Dynamics I & II	Experimental Mechanics	Digital Signal Processing	Communication Systems	Advanced Calculus
Fluid Mechanics	Thermodynamics	DSP Lab	Solid State Electronics	Linear Algebra
Engineering Materials	Mechanics of Materials	Analog Electronic Circuits	Logic Circuit Design	Abstract Algebra
Composite Materials I & II	Classical Physics I, II & III	Electronic Circuits Lab	Logic Design Lab	Probability & Statistics
Chem. & Tech. of Glass	Quantum Physics I & II	Radio Comm. Circuits	Acoustics	MEMS
Glass-working I, II, III, & IV	Welding I & II	Materials for Eng Design	Audio Engineering	Micro Fabrication Lab

2008 Raytheon – I worked in the field of electronic warfare with a research team developing electronic protection algorithms to mitigate the effects of radar jamming. Various aspects of estimation theory were implemented in different processing domains to cancel interference received from radar jammers.

2007 Raytheon – I was the primary researcher on a small team investigating Automatic Target Recognition algorithms for radar. I worked closely with technical industry experts in the areas of signal processing, image processing and information theory.

2006 Raytheon – I worked with a couple senior scientists developing a model and simulation of electrical hardware in a receiver and a signal processing algorithm. Our test team generated component level test data (S-parameters, AMAM, AMPM, Harmonics, ect.). Two simulations were developed; one in Matlab and another detailed model in Coware's SPW software (Signal Processing Worksystem). Our simulation provided the ability to alter component parameters (such as filter bandwidth) and analyze expected system response. The results of the analysis allowed us to optimize the design and implementation of our hardware and algorithm.

2005 Raytheon – I developed Matlab tools for signal analysis of radar and electro-optic remote sensing systems. I became an expert programmer in Matlab implementing GUI's and using multiple toolboxes to automate the processing of large amounts of data. I also worked with a test team to developing a Visual Basic software application for test data reduction and analysis.

2005 Raytheon – I supported a requirements verification and sell-off team that was extremely disorganized when I arrived. I built an SQL database which interfaced to MS Office using Visual Basic for Applications (VBA) programming language. The database and software application was used by the entire team to record data, communicate, track progress and automate reporting to management.

2004 Raytheon (El Segundo, CA) – I was a test engineering member on a team responsible for thermal vacuum testing of space flight hardware. I became familiar with the process and equipment involved in space simulation testing. Our lab used turbo pumps, cryo pumps, residual gas analyzers, quartz crystal microbalance, cold plates, liquid and gaseous nitrogen to control large environmental test chambers.

2003 University of Illinois – My engineering senior project was designing and fabricating a high fidelity audio loudspeaker system (mechanical & electrical). I studied numerous Audio Engineering Society research papers before selecting tweeter, midrange, and woofer drivers and developing an integrated system design. I constructed custom enclosures and wrote Labview programs to make automated measurements of the impedance and acoustic response. These measurements were used to model the crossover design in HP's ADS (Advanced Design System) software. The modeling effort allowed me to design and optimize the circuit for my specific hardware before I began building the network of filters.

2002 Lucent Technologies (North Andover, MA) – Our team was responsible for designing and implementing production testing of high-speed (80 GB/s) communication routing boards. Testing required use of an expensive 400km optical fiber, thus our plan required 8 different test sets to interface with one reel of fiber. I developed a Labview program that interfaced with several pieces of test equipment implementing a queue and providing communication among the 8 test stations and the reel of fiber. The test system was fully automated and my software was used in the factory production of every product.