Mark Khusid

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Objective — **A challenging position in electrical and computer design engineering**

University Education
1995 – 2000

Polytechnic University, Brooklyn, N.Y.
Bachelor of Science in Electrical and Computer Engineering
Graduation Date: Spring 2000
GPA: 3.50 / 4.00

Course Work Polytechnic University
1995 – 2000

Electrical and Electronic Circuit Analysis
C, C++, Assembly, and Fortran languages
TCP/IP Analysis and Programming
Electric Circuit Design and Testing
Engineering Design Project
Wireless, Ethernet and ATM Networks
Communications Engineering
Data Acquisition and LabView
VHDL Digital Design
Control Systems Engineering

Course Work Coursera.org
2018 - Present

Sensors and Sensor Circuit Design (Coursera Certificate)
Motors and Motor Control Circuits (Coursera Certificate)
Introduction to Cyberattacks (Coursera Certificate)
Cyber Attack Countermeasures (Coursera Certificate)

Honors & Awards

- Dean's List, Fall 1996 – June 2000
- William L. Everitt Student Award of Excellence
- IEEE Student Branch Award
- Best Project Award – 1999 Summer Junior Research Internship Program
- Professor Myron M. Rosenthal Scholarship

Employment

2/2019 – Present

Moog, Inc., East Aurora, N.Y.
Electrical Design Engineer

- Designed mixed-signal circuit card assemblies launch vehicle applications
- Participated in system integration testing and control loop closure activities for Electronic Control Units for launch vehicle applications
- Developed combination of Pspice, Python, Fortran and Jupyter Notebooks to analyze complex circuits and Electronics Control Unit subsystems
- Performed worst – case circuit analysis using in – depth custom component models
- Prepared and presented designs to customers

1/2014 – 9/2018

Electrical Engineering Consultant

- Consulted on and designed novel devices for solar power applications
- Constructed prototypes from concept to testing phase using engineering best practices
- Used LTSpice to simulate designs and verify concordance with test results from built prototypes
- Implemented out-of-the-box solutions to solve design and testing challenges in small scale and unique solar power applications

7/2007 – 12/2013

Moog, Inc., East Aurora, N.Y.
Electrical Design Engineer

- Designed analog and power circuit card assemblies for mission-critical Electronic Control Units for the Taurus II, Delta IV and Centaur Launch Vehicles
- Designed, tested and implemented all-opamp Inductive Simulator for simulating servovalve dynamic response
- Designed test fixtures for 787 Aircraft program
- Analyzed complex circuits using PSpice, MathCAD and Matlab analysis software
- Prepared and presented designs to customers

1/2007 – 7/2007 **Moog, Inc., East Aurora, N.Y.**
Engineering Technician
- Constructed test fixtures to test flight critical electronic circuit boards
- Coordinated with engineering to optimize test fixture construction and test procedures
- Performed development and production testing of flight critical electronic circuit boards

2/2006 – 9/2006 **Keller Technology Corporation, Inc., Tonawanda, N.Y.**
Electrical Controls Engineer
- Designed electrical control systems for novel and complete manufacturing machinery
- Prepared drawing package of electrical schematics in AutoCAD Electrical 2006
- Researched and documented cost estimates to design and fabricate electrical control systems in response to user requirement specifications

3/2003-2/2006 **MK Buffalo Unlimited, LLC, Buffalo, N.Y.**
Real Estate Investor
- Acquired, rehabilitated and tenanted investment properties in the Buffalo, N.Y. area
- Communicated with accountants, attorneys, brokers and other business consultants and acquired knowledge of their respective fields
- Managed costs and rental income to insure business profitability
- Acquired knowledge and skill in financial statements and business computer software

9/2000 – 3/2003 **Space Technology Branch, US Army CECOM, Fort Monmouth, N.J.**
Computer Engineer
- Designed, assembled, configured and installed mission-critical computer systems in fixed, Army vehicular and airborne assets
- Performed extensive design, construction and field testing of Army tactical Wireless RF and Optical communications systems
- Soldered and assembled prototype Army electronic, optical and RF circuits and systems
- Configured routers, switches and transceiver communications components
- Spliced and connectorized Army and commercial optical fiber cables and network cables

1/1999 – 6/2000 **MP3L Laboratory, Polytechnic University, Brooklyn, N.Y.**
Research Assistant
- Soldered and assembled experimental apparatus to study optical microresonators
- Worked with laser diodes, optical fibers and interferometers
- Machined an optical fiber – microsphere coupler to study telecommunications applications

5/1997 – 8/1997 **Markperi International Enterprises Inc., Islandia, N.Y.**
CAD / Computer Consultant
- Drafted electrical schematics and machine parts utilizing AutoCAD
- Coordinated with technicians to improve existing drawings
- Installed and maintained network over company computer systems

Publications

N. J. Vallestero, **M. Khusid**, N. S. Prasad, LTC J. Carrano, G. Duchak, J. Ricklin, M. Vorontsov, "Free-Space Optical Communications Systems (FOCUS): An Army Overview," SPIE Photonics West Conference, Free – Space Laser Communication and Imaging II, Seattle, 9-11 January 2002

Prasad, Narasimha S.; Kratovil, Patrick T.; Tucker, Sara C.; Vallestero, Neil J.; **Khusid, Mark** "Free-Space Optical Communication Link Performance Enhancement via Modified Receiver Geometric Characteristics," Proceedings of the SPIE, Volume 5160, pp. 483-494 (January 2004)

Special Skills
- Learning binary reverse engineering, cybersecurity tradecraft, vulnerability analysis, exploit development, writing shellcode for x86-64, x86 and ARM processors
- Proficient in basic web page design, web server operations, Amazon Web Services server administration, Docker Container deployment, and OpenVPN server administration
- Webmaster for www.mkdynamics.net and a Jupyter Lab server
- Proficient in Red Hat Fedora and Debian based Linux such as Fedora Core, Kali, Parrot OS, and Ubuntu, Whonix and TAILS
- Proficient in Python, C/C++, x86, x86-64 and ARM Assembly, Pascal and Fortran programming languages

Special Skills (cont.)

- Proficient in the Numpy, Pandas and ipywidgets extensions to the Python programming language
- Proficient in lathe and milling machine operations, electronic circuit design, soldering and construction, computer assembly and troubleshooting, automotive maintenance and repair

Hobbies

- Practicing penetration testing and Capture The Flag competitions on HackTheBox.eu and Pentester Academy
- Licensed Amateur Radio Operator with Extra Class license. Licensed Volunteer Examiner by ARRL, Volunteer Exam Coordinator
- Data communications using the AX25 protocol over TCP/IP protocol on VHF Ham radios and Broadband Hamnet
- Mixing Python and Fortran code in the Jupyter Lab development environment
- Raspberry Pi projects.
- Black Belt (1st Degree) in Tae Kwon Do, Black Belt candidate in Krav Maga, Shaolin Kungfu hobbyist, weight lifting and functional training
  Camping, primitive survival and self-sufficiency

References Available upon request