

## Mark Khusid

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[www.mkdynamics.net](http://www.mkdynamics.net)

### 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: 3.468 / 4.000

### 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](https://www.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)  
[Electric Power Systems](#) (Coursera Certificate)  
[What is Data Science?](#) (Coursera Certificate)  
[Data Science Methodology](#) (Coursera Certificate)  
[Tools for Data Science](#) (Coursera Certificate)  
[Data Analysis with Python](#) (Coursera Certificate)  
[IBM Python for Data Science, AI and Development](#) (Coursera Certificate)

### Course Work [Kaggle.com](https://www.kaggle.com) 2021 – Present

[Python](#) (Kaggle Certificate)  
[Pandas](#) (Kaggle Certificate)  
[Data Visualization](#) (Kaggle Certificate)  
[Time Series](#) (Kaggle Certificate)  
[Data Cleaning](#) (Kaggle Certificate)  
[Introduction to Machine Learning](#) (Kaggle Certificate)

### Course Work [Tryhackme.com](https://www.tryhackme.com) 2021 - Present

Complete Beginner Learning Path (Tryhackme Certificate)  
Pre – Security Learning Path (Tryhackme Certificate)  
Web Fundamentals Learning Path (Tryhackme 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**
- Assembled experimental apparatus to study optical microresonators
  - Worked with laser diodes, optical fibers and interferometers
  - Machined an optical fiber – microsphere coupler for 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**

Neil J. Vallesterio, **Mark Khusid**, Narasimha S. Prasad, John C. Carrano, George Duchak, Jennifer C. Ricklin, Mikhail A. Vorontsov, "Free-space optical communication systems (FOCUS): an Army overview," Proc. SPIE 4821, Free-Space Laser Communication and Laser Imaging II, (9 December 2002); <https://doi.org/10.1117/12.450522>

Narasimha S. Prasad, Patrick T Kratovil, Sara C. Tucker, Neil J. Vallesterio, **Mark Khusid**, "Free-space optical communication link performance enhancement via modified receiver geometric characteristics," Proc. SPIE 5160, Free-Space Laser Communication and Active Laser Illumination III, (27 January 2004); <https://doi.org/10.1117/12.510630>

**Special Skills**

- 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](http://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
- 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, Tryhackme.com 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 (1<sup>st</sup> Degree) in Tae Kwon Do, Black Belt (1<sup>st</sup> Degree) in Krav Maga, Shaolin Kungfu hobbyist, weight lifting and functional training, camping, primitive survival and self-sufficiency

**References**

Available upon request