

**Michael B. Parks**, PE, CEM | [mike@greenshoegarage.com](mailto:mike@greenshoegarage.com) | [linkedin.com/in/mbparks](https://www.linkedin.com/in/mbparks)

Me → Nutshell(**dad. engineer. maker. ethical hacker. artist. author.**)

Seek to collaborate with like-minded people who want to **improve the human condition** one project at a time. Searching for opportunities that sit at the intersection of **science, engineering, art, and design**. Bringing the brain of a professional **engineer** and the in heart of a **maker** to every job. Strive to keep the **humility** and **inquisitive** nature of a student of the world. Believe in **sharing knowledge** openly.

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### Education:

- U.S. Merchant Marine Academy, Logistics Major
- UMBC, B.S. Computer Engineering
- Johns Hopkins, M.S. Systems Engineering

### Professional Career:

- 1999-2009: Active-duty naval officer with service at NAVSEA Military Sealift Command, Naval Facilities Engineering Command, and NAVAIR
- 2009-Present: NHIV-0801 Engineer for NAVAIR and Naval Air Warfare Center Aircraft Division. Have held a variety of technical and management roles for numerous teams including AIR-1.6, AIR-5.3, AIR-7.10, Business Analytics & Data Intelligence Department, and PMA-205 Integrated Training Facility IPT.
- 2012-Present: Owner, Green Shoe Garage, embedded electronics development studio and ICS/IoT cyber-physical security consultancy located in Southern Maryland

### Skills:

- Schematic and PCB Layout using EagleCAD, KiCAD, and Altium Designer
- 3D Design using Fusion 360 and Sketchup
- C/C++ and Python including Micropython and Circuitpython
- Proficient in a variety of microcontroller platforms including AVR, PIC, MSP430/432 and ARM-based embedded systems. Both hardware and firmware development.
- Variety of editors and IDE including Visual Studio, Atom, Atmel Studio, TI Code Composer Studio
- IoT platforms including Azure, AWS, Google Cloud Platform (GCP), and Medium One
- Full-stack protocols and standards for embedded development from I2C/SPI/JTAG/UART for onboard interconnect communications to JSON/MQTT/REST/WebSockets for edge-to-cloud communications. Experience developing custom applications using industrial protocols and standards such as CANbus, Modbus, BACnet, and RS485 RS422.
- Building out and maintaining wired and wireless networks (PAN/LAN/WAN/Mesh) in both IT and OT spaces. Configured routers, switches, wireless AP's, and WLAN controllers. Familiar with setting up VPNs, segmented networks, and securing OT/IoT devices including edge devices and Internet gateways, and use of a variety of protocols including WiFi, BLE, GSM, ZigBee, LoRa, LTE Cat-M, NB-IoT, and Sigfox. Knowledgeable of the full OSI stack and implementing effective incident response and disaster tools and procedures.
- Implemented TLS/SSL public-key certificates based on X.509 cryptography for secure communications between IoT edge devices and IoT cloud services.
- Use of various manufacturing tools such as 3D printers, 3D scanner, CNC machines, waterjet cutters, lathes, PCB milling machines, PCB reflow ovens, laser cutters for rapid prototyping applications.

- Use of electronics test equipment such as DMM, oscilloscope, logic analyzer, signal generator, BusPirate, I2C driver, GreatFET, Black Magic Probe, JTAGulator, Analog Discovery 2
- Trained in a variety of reverse engineering and cybersecurity tactics, techniques and procedures, specifically with respect to Industrial Control Systems (ICS)
- Media production tools including Adobe Photoshop, Illustrator, Premiere Pro, After Effects, Audacity, and Autodesk Sketchbook, Procreate, and Affinity Designer.

**Qualifications:**

- Licensed Professional Engineer in Maryland (License #33857)
- Certified Energy Manager (CEM)
- Have completed training for Certified Ethical Hacker (CEH) and Global Industrial Cyber Security Professional (GICSP), attempting GICSP in next 12 months
- DAWIA Level 3 certified and member of Defense Acquisition Corps
- Graduate of NAVAIR Leadership Development Program

**Accomplishment Highlights:**

- Manage a \$20-million/year public works budget and supervised over 100 civilian and military personnel. Responsibilities included utility and energy analysis, resource budgeting, establishing key performance metrics, administering environmental and safety programs, management of base support vehicle and equipment program, space allocation planning, union negotiations, long term capital maintenance planning, developing statements of work.
- Responsible for a \$300-million integrated project list to repair hurricane-damaged facilities at NAS Key West. Led an interdisciplinary rapid damage assessment team tasked with thoroughly documenting all damage to facilities and infrastructure and then provide cost and schedule estimates for repair projects.
- Chief Architect conceptual design for major information technology systems including the Department of the Navy Airfield Safety Waiver web-based tool.
- Supported divestiture of excess government real property through data analysis of facility condition assessment. Work that led to the sale of excess government real property (Plant Replacement Value ~\$1B) to private industry to help encourage private economic growth.
- Established Innovation Cell to identify and analyze potential disruptive technologies with respect to infrastructure and facility planning. Spearheaded 3D modeling and laser scanning initiative of RDT&E aircraft hangars to help improve operations analysis and future planning.
- Hand-selected for long-term rotational engineering and program management assignment in support of the Integrated Battlespace Simulation and Test Department, Manned Flight Simulator. Helped support PMA 205 Common Simulation Products Integrated Product Team and Weapon Server Common Environment teams.
- Delivered over major 300 system improvements to NAVAIR's facilities and safety operations web-based tool based. Oversaw the delivery over 25 analytics apps (6 of which are recognized as Command Key Performance Indicators) covering safety and facility topics ranging from inspections, waiver approvals, mishaps to space allocation, project execution and materiel conditions. Reduced the time to complete requirements analysis of new tools by nearly 50% by integrating teams and implementing Human-Centered Design (HCD), Agile, Lean, Kanban, and SCRUM methodologies replacing older, waterfall and functionally "silo-ed" methods.

## **Training:**

- ICS Active Defense and Incident Response (SANS ICS515)
- Hacker Tools, Techniques, Exploits and Incident Handling (SANS SEC504)
- ICS/SCADA Security Essentials (SANS ICS410)
- Certified Ethical Hacker

## **Random**

- Host of the Gears of Resistance blog/podcast/YouTube/Twitch channel
- Tech writer at large for a variety of trade publications (Mouser, Molex, EECatalog)
- Dad to an awesome teenager

## **Links**

- **michaelbparks[.]com**
- **greenshoegarage[.]com**
- **gearsofresistance[.]com**
- **email: mike@greenshoegarge.com**
- **PGP Fingerprint: 87C4 CFC9 BF46 9AEA 53C8 2CFF 762F FC60 1DDE 61B6**