

# MATT G. WEIN

1234 56<sup>th</sup> Ave | Fort Pierce, FL 34949 | C: 999.999.9999 | O: 999.999.9999 | xxxxxx@xxx.xxx

---

## LICENSURE

Board of Professional Engineers, *Florida License: 110021216*

2017

## EDUCATION

<u>University of Florida</u> – Ph.D. Cybernetics & Artificial Intelligence	<u>Expected 2025</u>
<u>University of Florida</u> – M.Eng. Electrical & Computer Engineering	<u>Expected 2022</u>
<u>University of Florida</u> – Machine Learning (ECE) Certified	2022
<u>Virginia Tech</u> – Graduate Credits, Naval Engineering, Systems Design	2019
<u>University of Florida</u> – B.S. Civil & Coastal Engineering - Cum Laude	2017
<u>Moscow State University</u> – Russian Language Certification	2015

**Proficiencies:** ASM, C/C+, VHDL, Java, Perl, Python, Fortran, MATLAB, Linux, DSP, Signals & Systems, Comms, Microprocessors, FPGA, Machine Learning, Digital Logic, AutoCAD, SolidWorks, RISA3D, Cost Analysis, IEEE, AISC

---

## RESEARCH EXPERIENCE

**GatorSense Lab | Graduate Research Assistant | UNIVERSITY OF FLORIDA** Jan 2022 – Present

**Advisor:** Dr. Alina Zare

**Research Area:** Machine Learning, Remote Sensing, Image Processing

Implemented advanced machine learning techniques using data acquired through remotely sensed imagery (hyperspectral/LiDAR) from satellites, airplanes, and drones to understand forests at scales from individual trees to entire continents. Under the guidance of Dr. Alina Zare, work on the Macrosystems NEON Project:

- Produced improved spatially explicit data on species and traits for ~50 million individual trees.
- Disentangled the importance of processes driving species distribution, abundance and biodiversity scales.
- Developed cross-scale models of tree structural traits and allometry that incorporate environmental variation and biological interactions to inform biomass estimation

**SmartDATA Lab | Graduate Student Researcher | UNIVERSITY OF FLORIDA** Jan 2022 – May 2022

**Advisor:** Dr. Joel Harley

**Research Area:** Digital Signal Processing, Machine Learning, Medical Imaging, VoxelMorph

Developed machine learning algorithm to enhance existing NDT sonar fault detection devices used for inspection of CF composite air foils. Ultimately ensuring structural integrity and extend service lifespan of US Airforce & Naval air fleets by allowing deformations to be more efficiently and accurately mapped.

**SmartSystems Lab | Graduate Research Assistant | UNIVERSITY OF FLORIDA** Jan 2022 – May 2022

**Advisor:** Dr. Christophe Bobda

**Research Area:** Computer Vision, Multitask Learning

Environmental awareness and object identification for autonomous robots, enabling completion of physical tasks using servo operated arms. Focus on optimization of physical local limitations or "no-go" zone identification, object identification, and kinematic calculations for interaction with the physical environment. Expansion of environmental mapping and data analysis for movement and object interactions were also priorities. Machine learning implementations, ROS, C++, kinematic power consumption evaluations were all required to further the goal of enabling the robot to more efficiently complete simple tasks.

---

## PUBLICATIONS

1. **Data science competition for cross-site delineation and classification of individual trees from airborne remote sensing data.**

S. Graves, S. Marconi, D. Stewart, I. Harmon, B. G. Weinstein, Y. Kanazawa, V. M. Scholl, M. B. Joseph, J. McClinchy, L. Browne, M. K. Sullivan, S. Estrada-Villegas, E. Tusa, D. Zhe Wang, A. Singh S. A.

Bohlman, **M. Wein**, A. Zare, E. P. White

**bioRxiv, 2022**

# MATT G. WEIN

---

## RELATIVE EMPLOYMENT

\*Contact information available upon request

### **Software Engineer** | L3HARRIS | Melbourne, FL

**May 2022 – August 2022**

Worked across the Space & Airborne Systems division, developing hardware/software interfacing and evaluating overall system operational performances.

### **Graduate Teaching Assistant** | UNIVERSITY OF FLORIDA | Gainesville, FL

**May 2021 – Sept 2021**

Instructed alongside Dr. Eric M. Schwartz in his Microprocessor Applications course. Proctored labs, practical examinations, conducted office hours weekly and graded student submissions. Topics covered included program structures, assembly and C programming for memory-mapped peripherals including UART, DMA, AD/DA converters and interrupt controllers.

### **Federal Emergency Response Official** | DEMSI (SERCO)/FEMA | N/A

**Nov 2019 – Present**

- Conducted site inspections, identified and assessed, validated infrastructure damage; evaluated scopes
- Reviewed and analyzed professional architectural/engineering reports, designs and as-built plans.
- Validated applicant-provided scopes of work, including related code and standard requirements.
- Advised FEMA staff on the technical validity of claims presented under FEMA's arbitration process. Occasionally testified as an expert witness on FEMA's behalf
- Responsible for design, development, implementation, and analysis of technical products and systems. Performed engineering design evaluations.
- Developed a range of products and their respective cost estimates. Recommended alterations to development and design to improve quality of products and procedures.

### **Project Engineer, Manager** | JOHNSON BROS CORP | Daytona Beach, FL

**Sept 2018 – Sept 2019**

FDOT Project – Veterans Memorial Bridge; Monitored progress, production, schedule deviations and variances and developed alternate methods for corrective action by studying project plan and specifications, calculating time requirements, updating schedule and sequencing project elements for constructability. Prepared CIOWs, project status and schedule progress report documents by collecting, analyzing, and summarizing information and trends; developing trending charts, schedule analysis and integrated project plans regularly, determining actions for field teams. Reviewed project specifications by studying product design, customer requirements, and performance standards. Controlled project costs and monitored budget by developing budgeting and cost projections, also coordinating with vendors for material needs. Performed structural, geotechnical monitoring, material and project plan compliance as required by contract documents. Assessed impacts to critical path and near-critical activities. Verified schedule integrity and evaluated logic/float paths. Supervised operations in field.

### **Structural Engineer** | SOUTHLAND HOLDINGS, JOHNSON BROS | Orlando, FL

**Aug 2017 – Sept 2018**

Construction engineering design contractor for heavy civil and marine projects. Design procurement includes hydro facilities, suspension, segmental, bascule, swing and lift span bridges, power plant infrastructure, cofferdams, retaining walls, crane rigging, picking beams and pick analysis. Submit plans to US Army Corp for approval. Ensure compliance with AISC, ASTM, DOT, USACE EM-385, and OSHA standards. Provide means and methods for field. Meet with partnering companies to optimize erection, demo, materials development and application on jobs. Currently participating in design build and other various project delivery methods.

#### **Project Highlights:**

Central Business District Bridges, Birmingham AL  
Bascule Bridge over Lake Worth Lagoon, Pam Beach FL  
Veterans Memorial Bridge, Daytona FL  
Kentucky Lock & Dam, Grand Rivers KY  
SELA 26 Levee, New Orleans LA  
Lewis & Clark Bridge, Williston ND  
Capers Ridge Pump Station, Houston TX

#### **Certifications:**

OSHA 10  
OSHA 30  
First Responder CPR/AED/First Aid  
Primavera P6 Professional Management  
Concrete Field Technician Level 1 & 2  
Stormwater & Erosion Inspector  
Transportation Construction Inspector

# MATT G. WEIN

## **Geotechnical Engineer | FROEHLING & ROBERTSON | Washington D.C.**

**June 2017 – Aug 2017**

Construction material testing and geosstructural monitoring. Coordinated testing for projects, oversaw CMT equipment maintenance and calibration for annual review by Cement & Concrete Reference Laboratory (CCRL). Conducted data analysis, managed project scheduling, visited sites for internal review and record.

### **Project Highlights:**

Walter Reed Army Medical Center, Bethesda MD  
Ronald Reagan Airport, Washington DC  
US Naval Research Laboratory, Chesapeake Bay MD  
Naval Surface Weapons Center, Dahlgren VA

### **Certifications:**

CMT Specialist  
APNGA Portable Nuclear Gauge Safety  
Nuclear Gauge Safety & Transportation  
HAZMAT Safety

## **Project Manager | ADVANCE TESTING | West Point, NY**

**Jul 2014 – Dec 2014**

Performed onsite material inspection of concrete, steel and nuclear density gauge testing of HMA. Registered with ACI, AGC, ASC, HAZMAT, NRC, NYDOT. Security clearance, entrusted access to radioactive materials, devices, equipment and company vehicles for site travel. Delivered samples to DOT materials lab; performed QCQA inspections on site and in house. Determined level of quality and respective bid bonus percent for contractors upon completion. DOT 50, 60, 70, & 80 series roadways on HMA. On duty 70-100hrs per week.

### **Project Highlights:**

Michie Stadium, West Point Military Academy NY  
New Tappan Zee Bridge, Tarrytown NY  
Orange Regional Medical Center, Middletown NY  
Taconic State Parkway, Hopewell Junction NY

### **Certifications:**

AASHTO Level 1  
ACI Concrete Field Technician Grade I  
Associated General Contractors of NYS  
NYSHMA Density Testing Inspector y

## **Designer & Distributor | SOCIAL LIGHT INC. | Vero Beach, FL**

**Oct 2004 – Dec 2013**

Handled communications, container shipments, order processing. Analyzed warranty requests. Tended verification and renewal of shipping certifications according to national and international legislature, aided preliminary purchase drafts and educated new clientele on proper filling techniques and product maintenance. Served as logistics coordinator, QCQA tech, and pyro-technician, ensured DOT, Federal Bureau of Explosives and HAZMAT standards. Oversaw QC of lighters, butane, accessories, and respective packaging.

### **Technical Involvement:**

- Visited factory owners and engineers on business trips to Shenzhen, Suzhou, and Wenzhou in China to improve functionality as well as design new models and inspection methods for upcoming seasons.
- Represented company at *AmericasMart Trade Center* (Atlanta, GA). Largest international permanent trade center for wholesale in the US. Clients included: HSN, Neiman Marcus, Overstock, Zippo

---

## **RECENT VOLUNTEER SERVICE**

ASCE - Make-A-Wish Star Wars Half Marathon	Orlando, FL
ASCE - Toys for Tots Collection	Orlando, FL
ASCE - November Food Drive Social	Orlando, FL
ASCE Share-A-Meal at Ronald McDonald House	Orlando, FL
SAR EL, VFI - Israeli Defense Forces	Tsipori, Israel
UF Hillel & St Francis House	Gainesville, FL
Academic Treks Cultural Immersion	Guadeloupe, Dept. of France
Ashwood Grove Polo & Equine Rehabilitation	Vero Beach, FL
Habitat for Humanity	Melbourne, FL
SpringFest - Case Western Reserve	Cleveland, OH
Ducks Unlimited	Donor
The Battle Buddy Foundation	Donor

---

## **HONORS & SOCIETIES**

Magna Cum Laude & Consecutive Deans List  
ACI, AKC, ASCE, IEEE, FES, MENSA, NFGSPC, NSBE,  
NSF, NASAR, NAPS, OSHA, SARCF, SWUSAR, USAR  
Ashwood Grove Polo & Goldstar Hungarian Vizslas  
UFIC Ambassador for Russia

50<sup>th</sup> Anniversary ΣAM – Mu Gamma Scholarship  
Project Beyond Alumni & Birthright Participant  
Founder, President of DIY Engineers at UF  
Theatre – ASM, Light/soundboard, Set design  
VFI Scholarship Recipient & VFI Ambassador

# MATT G. WEIN

---

## FIELD INTERESTS

---

cybernetics & artificial intelligence  
neural interfacing  
neural networks & deep learning  
digital and RF communication  
cryptography/encryption  
hyperspectral imagery  
cyber-physical systems  
autonomous maritime navigation  
biometric verification technology  
pattern recognition  
computer vision & image processing  
micro-processors in avionics  
biomedical engineering  
formula racing  
quantum computing  
high-speed transport  
weaponry defense systems  
cyberphysical security  
sensor and weapons systems  
orbital mechanics, propulsion  
government infrastructure, security systems  
machine learning time series, stochastics

---

drone & sonar applications in structural analysis  
geothermal, deep earth digs & tunnel boring  
sand dredging & oil refineries  
erosion prevention, retaining walls & biofilms  
organic explosives & polymer materials  
optimization, structural rehabilitation  
BIM, 3D data modeling & drone applications  
SAR GIS & emergency transport systems  
foreign services, search & rescue  
Russian/American economic relations  
cold weather construction methods  
cost analysis & public private partnerships  
green engr vertical farming & crop propagation  
sustainability & emission regulation  
reinforced concrete, advance steel design  
offshore drilling, fracking  
petroleum engineering  
molten salt fueled nuclear reactors  
marine diesel, ocean city ports  
water treatment & waste management  
desalination & water retention systems

---



LINKEDIN



PORTFOLIO



GITHUB



GITHUB