Joseph Quinn

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SOFTWARE/SYSTEMS ENGINEER – CLOUD, EDGE SYSTEMS, OBSERVABILITY
PYTHON ➲ COMPUTER VISION ➲ AWS ➲ IOT ➲ EDGE SYSTEMS & PROTOCOLS ➲ FAST API ➲ REACT

Computer Science & Engineering graduate and operations engineer focused on cloud-connected sports technology systems, field-deployed radar/camera infrastructure, observability automation, and live production workflows. Experienced building Python, AWS, Linux, Grafana/Splunk, FastAPI, React, and Raspberry Pi-based tooling for real-time sports data environments where reliability, telemetry visibility, and operational response matter during live events.

AREAS OF EXPERIENCE/EXPERTISE

Languages: Python, TypeScript, JavaScript, Java, Bash, C++

Cloud & Serverless: AWS Lambda, API Gateway, DynamoDB, EventBridge, Secrets Manager, S3, Azure Blob, IAM, CloudWatch, AWS IoT Core, EC2, ECS, SQS and Kubernetes exposure.

Observability: Grafana, Prometheus, Splunk HEC, alerting workflows, operational dashboards, telemetry pipelines

Edge / Linux / IoT: Raspberry Pi, Linux, system, MQTT, Thing Shadows, IoT Jobs, GPIO, SNMP

Backend / Tools: FastAPI, REST APIs, CLI tools, React, React Native, Docker, Git

Configuration & Data Formats: JSON, YAML, TOML

Computer Vision / 3D: OpenCV calibration, camera projection, 3D-to-2D rendering, trajectory normalization & video

PROFESSIONAL EXPERIENCE

TRACKMAN | Phoenix, AZ — March 2026 to Present

***Operations Engineer* - Software Development and Support**

Develop software and operational tooling for Trackman's golf broadcast product and radar systems. Supporting production troubleshooting, R&D with new software releases, observability, and support automation. Work across AWS serverless services, Grafana/Splunk telemetry, internal Python tools, radar diagnostics, and field-deployed systems.

- Owned end-to-end delivery of a **Grafana-to-Zendesk ticket enrichment pipeline**, including AWS deployment, DynamoDB **alert-ticket state tracking**, **ticket deduplication logic**, and future enhancement planning for **support automation workflows**. Uses SQS to buffer the incoming alerts.
- Built a full-stack **observability dashboard for Trackman broadcast pipelines** that correlates TourServer config, DataProcessor health, **live websocket shot data**, and container logs to detect missing/late data, pipeline misconfiguration, radar outages, reducing debugging time for support, operations, and R&D teams. **Dockerized** the dashboard to allow for portability between different servers.
- **Enhanced internal tooling and diagnostics applications** with API integrations, Azure Blob storage viewers, and operator-focused UI improvements to **streamline radar calibration**, spectrogram analysis, and field troubleshooting workflows. Used **proper git practices** like **PRs and branching** with good commenting to help developers push features into master branches.
- Built **scheduled telemetry pipelines that query Grafana/Prometheus metrics**, **enrich device/site health data**, normalizes events to support **customer and support-team requests,** and forward structured metrics to Splunk HEC.
- Supported radar deployment and product operations involving radar data capture, **site geometry, 3D mesh/layout context,** frequency planning for tournament deployments involving Trackman multi-radar broadcast environments

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PGA TOUR | Ponte Vedra Beach, FL March 2025 to Feburary 2026

ShotLink – Technical Support Analyst/Development

Engaged in wide variety of background operations related to computer network and DevOps. Perform operations critical to the Shotlink 2.0 system. Use Shotlinks API to aggregate data and automate operations.

- Python tools and libraries used: **boto3** (aws connection), **requests** (for https requests for api calls), **tkinter** (lightweight python application), **FlaskAPI** (for small API), **paramiko** (for ssh control and running commands on course devices).
- Built an **AWS IoT Core** fleet to allow for consistent state monitoring with shadows and bulk OTA updates. Other products I gained experience with – AWS fleet manager, s3 (bucket storage), ssm agents (device control).
- **Active Tournament Technical Monitoring,** stay alert to any drops in network, EC2 instances, on-site cameras, scoreboards. Notify the on-site team in a timely manner.
- Productionized a Raspberry Pi/Linux SNMP collector that polls switches, Cisco Catalyst devices, UPS units, PTP antennas, rack sensors, and PDUs, then forwards normalized metrics to Splunk HEC.
- Replaced fragile manual execution with a managed systemd service using boot enablement, auto-restart, journalctl logging, environment-based configuration, and operational control commands. Improved collector reliability to prevent one failed device from blocking the polling loop.

ShotLink – Field Technician May 2024 to March 2025

Assisted on-site at professional golf tournaments that ShotLink was present at (PGA TOUR, USGA, LPGA, Masters).

- **Technical Troubleshooting** and **efficient teamwork and communication** in a live production environment.

SELECTED TECHNICAL PROJECT

Radar-to-Video Golf Trace Calibration System

Purpose: Build a user pipeline that converts golf radar trajectory data into a time-synced video trace from an externally placed camera. The project is focused on understanding radar-generated 3D ball flight, camera calibration, 3D-to-2D projection, and repeatable calibration workflows for sports technology applications.

- Built a radar-to-video pipeline that normalizes radar and broadcast trajectory JSON into a common 3D shot model.
- Built a radar-to-video calibration pipeline using OpenCV and ChArUco calibration to align 3D ball-flight trajectory data with external video, applying camera intrinsics/extrinsics, pose estimation, coordinate transforms, 3D-to-2D projection, sensor fusion, and time synchronization concepts relevant to sports broadcast graphics, robotics perception, AR, and machine vision.
- Designed a FastAPI backend, CLI workflow, and React Three Fiber 3D workspace for repeatable operator calibration, camera positioning, and trace preview tooling.

EDUCATION

B.S., Computer Science and Engineering

The Ohio State University – Columbus, OH ▪ Graduation May 2024

- GPA: 3.6
- **Relevant Coursework:** Algorithms, Computer Networking, Network Security, Software Engineering, Systems, Computer Vision, Wireless Networks, Capstone: Knowledge Base Systems / RAG, Digital Logic Design, Process Engineering for Manufacturing Operations

LEADERSHIP DEVELOPMENT

ROTC – Practiced and developed leadership skills, learned how to excel in teamwork skills, setting goals and completing team tasks in an efficient manner (2 semesters: August 2019-May 2020)

Eagle Scout Project – Contributed to e-waste collection and promotion of proper disposal of electronics.