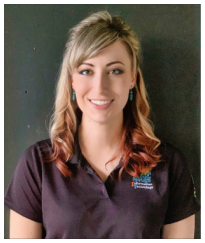
Andrea Kosta



SayHelloToAndreaKosta@gmail.com | (407) 697-8086

EXECUTIVE SUMMARY

Software Engineer with 15+ years turning complex systems into lightning-fast, scalable software. Equal parts systems thinker and hands-on builder, with a strong track record translating complex backend logic into intuitive UIs and seamless user experiences. I've led teams, shipped mission-critical code, and optimized every layer from kernel to model inference. I thrive at the edge of research and engineering, turning abstract ideas into elegant, performant tools. Passionate about mentoring, experimentation, and building clean, reliable software you won't be getting urgent calls about over the weekend.

TECHNICAL SKILLS

Languages & Frameworks: Java, C++, Python, JavaScript, Qt/QML, Selenium, JUnit, TestNG
Frontend & UI Frameworks: Vue (learning), React, Redux, JavaScript (ES6+), Node.js, HTML5, CSS3, Less, Sass, AJAX, Webpack, Qt
Version Control & CI/CD: Git, GitLab CI, Jenkins, Docker, GitHub Actions, Ansible
Cloud & DevOps: AWS (EC2, S3, IAM, RDS, Lambda), GCP, Azure, Docker, Kubernetes
Testing Strategies: Smoke, Functional, Integration, Regression, Performance, Load Testing
Collaboration & Agile: Agile methodologies, Scrum, Test-Driven Development (TDD), Cross-functional teamwork

WORK EXPERIENCE

Ideal Applications — Arroyo Grande, CA
Lead Software Engineer & QA Consultant — 2019 — present

➢ **Middleware:**

- Spearheaded initiatives to integrate AWS cloud services and AI tools, such as Github CoPilot, ChatGPT and Databricks, to accelerate development cycles and improve system reliability.
- Designed and implemented a redis-based client session cache system that enhanced scalability and maintainability across distributed services.
- Engineered a robust facial recognition system using Plumerai AI software, significantly enhancing security and user experience.
- Optimized motion detection zone algorithm for all field cameras, improving system performance and accuracy.

➢ **OSPM and PeakWifi:**

- Architected and maintained C++17/14 embedded firmware for sensor-driven control systems on microcontrollers, optimizing memory usage and **reducing boot times by 40%.**
- Design and implement real-time data acquisition modules interfacing with motor controllers and encoders via I2C, SPI, and CAN, ensuring **sub-millisecond latency**.
- Lead **end-to-end testing strategy for embedded platforms**: authored C++ unit tests, integrated hardware-in-the-loop (HIL) tests, and automated regression suites.
- Built CI/CD pipelines for cross-compiling & deploying firmware images, **reducing build & test cycles from hours to under 30 min.**
- Built **automated test pipelines** for cloud-native applications, **reducing release cycle time and manual testing efforts by 70%**.
- Implemented **CI/CD-driven test execution**, ensuring robust deployment validation before release.
- Developed and maintained **automated test suites for functional, integration, and performance testing** across AWS-based applications.
- **Designed batch testing workflows**, improving data validation processes and **reducing data integrity issues by 40%**.
- Designed **load and performance testing strategies**, identifying and resolving bottlenecks before deployment.
- Developed Java-based automation scripts for **UI and backend testing**, improving test coverage by 50%.
- Mentored junior engineers on **best practices in C++, cloud-based QA automation and debugging Java-based applications**.

Technologies Used: C++, Java, Javascript, (React, Redux, Node.js), CSS, Python, Go, Maven, Gradle, Arduino, Docker, Kubernetes, Git, Bitbucket, Jenkins, SQL, Bash, Git, IntelliJ, Spring, Visual Studio, OpenAPI Spec, Restful APIs, AJAX, Linux, AWS (S3, ElastiCache, IAM, Secrets Manager, Resource Access Manager, Relational Database Services, Amplify, Cost Management), Junit, IntelliJ, Spring, JIRA, Linux, Apache Tomcat, Artifactory, OpenAPI Spec

Southwest Airlines — Dallas, TX
Software Engineer Senior — 2019 — 2020

➢ **Booking/Sales Operational Search System (Customer 360):**

- Designed and implemented **QA automation strategies** for customer-facing digital platforms.
- Led **integration and performance testing**, ensuring seamless cross-service communication.
- Implemented **multi-threaded data logging services**, ensuring **deterministic performance and thread safety** across POSIX APIs.
- Created automated build/test pipelines for embedded software, integrating **unit and hardware-in-the-loop (HIL) tests**.

Technologies Used: Java, C++, Jenkins, Docker, Git, Bitbucket, Jenkins, Linux, Bash, Apache Tomcat, Active MQ, Javascript, (React, Redux, Node.js), X/HTML, Gradle, Junit, Elasticsearch, IntelliJ, Microsoft Windows, Spring, JIRA

USAA — Plano, TX
Software Engineer Senior — 2015 — 2019

➢ **Bank Developer Experience:**

- Created system functionality for managing customer profile data creation, storage, and retrieval.
- Created and led **automated test strategies** for high-scale financial applications.
- **Developed a test data management framework**, improving data validation in banking systems.
- Designed **automated integration testing** for RESTful APIs, reducing manual test effort by 60%.
- Led **TDD adoption for QA teams**, ensuring structured test coverage and improved debugging processes.
- **Conducted usability testing and user research** to refine digital interactions and enhance accessibility.

Technologies Used: Java, C++, Docker, RTC, Git, Gitlab CI/CD Pipelines, Javascript, (React, Redux, Node.js), X/HTML, Openshift, Junit, TestNG, Gradle, QPP, JCL, EZT, vbscript, Eclipse, RSA, Microsoft Windows, Citrix, z/OS on IBM Mainframe, SQL, Robin, Lucene, Couchbase, Spring

ZixCorp Dallas, TX
Software Engineer 2014 — 2015

➢ **Various Email Encryption Products:**

- Developed **automated test cases** for secure email encryption products.
- Built **data integrity validation scripts**, ensuring encryption processes met compliance standards.
- Conducted **load testing** to optimize encryption services for high-traffic enterprise clients.

Technologies Used: C/C++, Jenkins, Javascript, X/HTML, CSS, Java, .Net, Perl, Objective C, JIRA, Eclipse, Visual Studio, OSX, iOS, Microsoft Windows, Linux, CentOS, Selenium, JUnit, Cucumber

L3 Communications – Unmanned Systems Dallas, TX
Software Engineer 2013 — 2014

➢ **P42-T2P2 (A Glider Controller Variant)**:

- Upgraded P42-T2P2 government product encryption algorithms to be compliant with The Federal Information Processing Standard.

Technologies Used: C/C++, bash, Visual Studio, Wireshark, RTOS, Greenhills, Multi, Microsoft Windows, in-house software

Lockheed Martin Missiles and Fire Control Orlando, FL/Grand Prairie, TX
Software Engineer LDP (Leadership Development Program)- PAC3 Management Team 2009 — 2013

➢ **Fire Solution Computer Redesign (FSCR)**:

- Upgraded tactical (real-time embedded) software build to an endian-independent architecture.
- Serialized tactical (real-time embedded) software build for new hardware architecture based on PAC3 legacy emulation.
- Automated risk data analysis, increasing speed of data transfers between account managers and the program manager.

➢ **Patriot Advanced Capability Missile Field Test (PAC3 MFT)**:

- Coordinated entry/exit criteria for major program reviews, ensuring program deadlines and major milestones were met.
- Assisted with risk management, increasing transparency between PAC3 MFT and upper management teams.

➢ **Medium Extended Air Defense System (MEADS)**:

- Selected to represent the MEADS team and support program objectives during Flight Tests.
- Responsible for the development, testing, and integration of radar support hardware.
- Responsible for assessing system vulnerabilities and developing corresponding tests to strain the system.

➢ **Long Range Anti-Ship Missile (LRASM)**:

- Selected to represent the LRASM team and support program objectives during Flight Tests.
- Responsible for the development, testing, and integration of mission support hardware
  - Laser Rangefinder Driver coupled with Data Extraction Tool for real-time flight data recording via RS-422.
  - AD Signal Converter driver and application to read real-time flight data via Ethernet.
- Developed Embedded Operational Flight Program Units
  - Power Electronics Control Unit (PECU), Digital Engine Control (DEC), Fuze Subsystem.
  - Built-In Test (BIT) for several subsystems: PECU, DEC, Fuze, GPS, Mission Processor.
  - Updated Telemetry Databases and Telemetry Data Analysis Tools.

➢ **RNAV Area Navigation/Scorpion**:

- *Developed a Message Compiler*
  - Generated code by translating high level user-specified message data to low-level, ready-to-compile C++ source code files.

➢ **Joint Allied Threat Awareness System (JATAS)**:

- *Designed and Developed the Digital System Model GUI for C++ Application* - (Task Lead over a team of two employees.)
  - Integrated Hostile Fire Indication, Missile Warning, and Laser Warning algorithms.
  - Modeled threat engagements by inserting threats with various infrared signatures into different clutter background scenes collected during JATAS clutter flights.

Technologies Used: C/C++, .Net, bash, Visual Studio, Matlab, Doxygen, QT Developer, Wireshark, RTOS, Microsoft Windows, UNIX/Linux

EDUCATION

University of Central Florida Orlando, FL
Bachelors of Science. (Computer Science) 2011

National Academy of Sports Medicine (not relevant to the position but shows I have hobbies and would slay in a zombie or AI apocalypse :D) Gilbert, AZ
Certified Personal Trainer, specialization in *'Corrective Exercise'* 2025
Certified Physique and Bodybuilding Coach
Certified Nutrition Coach