

# Javier Real-Alvarado, EIT

## Mechanical Engineer

### PROFESSIONAL EXPERIENCE

**Stress Engineer** Sep 2022 - Present

**Collins Aerospace, Design Center**

#### Engine Build-Up Design & Analysis

- Reviewed **over 75% of system design**, involving main fuel, electrical, hydraulic, cooling, anti-icing, draining, and senseline components
- Formulated Margins of Safety assessments for **critical condition part designs**, with up to 10 analysis per week
- Secured **16% overall of FEA product functions** in Fan Blade-Out conditions, High Cycle Fatigue Analysis, and Maneuver Evaluation
- Performed over **15 different types of analysis**, including engine hose slack, clamp, fastener, bearing, bolt, and revit analysis
- Inspected bracket, blade, & flange designs, **redefining part features** for functionality across two different on-demand projects
- Managed product's structural integrity** across three certifications, with client updates for load, temperature, and pressure values
- Restructured and standardized three out of five stages in engine build-up **design process** and stress mitigation

**Manufacturing Engineer** Oct 2021 - Aug 2022

**Honeywell, Engineering Dept.**

- Designed over 15 Manufacturing Routes and part **assembly processes** weekly
- Expedited Daily First Article Inspection Reports on three concurrent projects, also handling BOMs for **product line manufacturing processes**
- Oversaw **Geometric Dimensioning & Tolerance Analysis** for 450+ engineering drawings with respective interpretation, revision, and blueprint editing
- Administered **Failure Analysis** in flow testing for five manufacturing routes
- Systematized Reworkable Part Orders** and returns on inventory, cross-referencing specifications & standards manual
- Validation of database for **metal and alloy materials**, tracking for over 950 parts numbers
- Programmed over 500 lines of *Gcode* for a **robotic welding automation** implementation

**Mechanical Engineer Intern** Dec 2021 - Jun 2022

**GKN Aerospace, Maintenance Dept.**

Achieved a 3% machine availability increase and 95% process efficiency for CNC's. TPM implementation allowed time increase between failure and time repairing decrease

### EDUCATION

**MSc in Mechanical Engineering** Feb 2023 - Present

**Autonomous University of Baja California**

Composite Materials, Prototyping, Manufacturability, and Product Functional Design

**BS in Mechanical Engineering** Aug 2018 - Jun 2022

**CETYS University**

- CGPA:** 3.6/4.0

### RELEVANT COURSES

#### Electronics Design & Assembly:

Battery Voltage modules, FPC & ACF design, Antennas, WiFi, GPS & GSM integration, LCD optical devices, and EMC enclosures from MIT, Univ. of Colorado Boulder, Univ. of Pennsylvania, & Northwestern

#### Composites & Material Science:

Polymer, thermoplastics, material surface, epoxy composites, coatings, and ceramics from Georgia Tech, Duke, & Univ. of Manchester

#### Product Design & Manufacturing:

Innovation, User Experience, DFA, Fabrication & Packaging from MIT, & Univ. of Buffalo

#### Mechanical Design & Analysis:

Dynamics, optics, fracture, & electromagnetic fields from MIT & Univ. of Michigan

**HOBBIES:** I love audio engineering, cameras, consumer electronics, music, reading, & going on runs

### CONTACT

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📍 Mexicali, MX

in Javier Real-Alvarado

### KEY SKILLS

- **Mechanical Engineering Analysis** • **3D Computer-Aided Design** • **Finite Element Analysis Theory** • **GD&T** • **Structural Analysis** • **Material Science** • **Composites** • **Functional Part Design** • **Mechanical Design** • **DFMEA** • **Python** • **Statistical Tolerance Analysis Techniques** • **Hardware Engineering** • **FPC Design** • **CAD & Industrial Design** • **Manufacturing Route Design** • **DFM** • **Production Operations** • **Product Specifications** •

### TECHNICAL SKILLS

**3D CAD:** Siemens NX, CATIA V5, SolidWorks, AutoCAD, CREO 8, Fusion 360, SketchUp

**FEA:** MSC Patran & Nastran, FEMAP, Hyperworks, MATLAB, MSC Apex, ANSYS, Rescale, MSC Actran, Abaqus

**GD&T:** GD&T Advisor, Discus, T-Maps

**Material Selection & Manufacturing:** ANSYS Granta, SAP

**Statistical Tools:** MySQL, Tableau, Minitab, Access, Power BI, & Visio

### SOFT SKILLS

- Enthusiastic & self motivating • Analytical & problem solving skills • Creative & driven by innovation • Multi-functional nature with ability to juggle tasks • Effective written and verbal communication • Flexibility and adaptability •

### VOLUNTEER WORK

**Design Engineer, Engineers Without Borders**

Designed piping grid for 250+ homes for water supply system in Guatemala

### CERTIFICATIONS

- SolidWorks Mechanical Design Professional (2021)
- NCEES Engineer-In-Training (2023)
- MIT Designing Product Families: From Strategy to Implementation (In Progress)
- Google Data Analytics Professional (In Progress)
- Google Project Management Professional (2023)
- Developing Innovative Ideas for Product Leaders, Univ. of Maryland (2023)