RYAN SASS *Curriculum Vitae*

Systems Engineer and Technical Project Manager

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EXPERIENCE

Staff Systems Engineer

Zeiss Microscopy, Inc. Dublin, CA 7/2024

- Managing and contributing to the development of a new cutting-edge x-ray microscope utilizing precision motion control of a complex sample handling system.

Senior Systems Engineer

Ripcord Inc. Hayward, CA 5/2023 – 4/2024

A leader in document-to-data conversion using AI software and robotic automation.

- Led the engineering development and managed a 5-person engineering team for the automated robotic book imaging machine project, managing the entire 7-month design development from prototype to production and successfully deploying two production machines in Japan.
- Designed and fabricated numerous mechanical assemblies and countless parts using SolidWorks to support testing, design development, and final design.
- Developed and implemented robotic movement code and process flow development, showcasing ability to code in V+ (ACE) for the robotic arm, TwinCAT automation software for PLC-Robot arm interfacing, and Visual Studio for coordination of vision components and motion actuators as well as GUIs.
- Promoted to primary SolidWorks PDM Admin managing the company's PDM data Vault with MySQL

Senior Application Engineer

EaglePicher Inc. Remote 9/2019 – 1/2023

A manufacturing leader in battery, energetic, and BMS technologies with solutions for aerospace, defense, and health.

- Developed initial battery designs and drawings to convey proposed solutions to individual customer's needs using extensive expertise in SolidWorks.
- Proposed and developed diverse battery solutions for customer applications including use in submarine, lasers, directed energy weapons, and aerospace vehicles.
- Created a proposal pricing estimation tool using advanced Excel skills to improve cost projections and resource timing visibility, resulting in 15% improvement of contract bid accuracy for SBU & Application teams.
- Generated an Excel-based tool to streamline safety testing resulting in higher contract execution efficiency by 10%.
- Provided technical design support during customer engagements, including feasibility assessments, cost and

EDUCATION

Master of Science, Mechanical Engineering

with Emphasis in Robotics and Mechatronics

Santa Clara University 2016

- **3.74 Major GPA, 3.80 Cumulative GPA**
- **Capstone Project:** Demonstrate relative automated control of an unmanned aerial vehicle relative to a wall using control loop feedback and Lidar sensing. Developed hardware and software as an add-on component to a commercial drone and implemented a testing regime to demonstrate operability.
- **TA Duties:** Assisted instruction in courses including Graphical Communication, Machine Design, Finite Element Theory, Vibrations, and Control.
- Awarded SCU Teacher's Assistant of the Year (2016) based on nominations from students and faculty.

Bachelor of Science, Mechanical Engineering

UC Santa Barbara 2009

- **3.82 Major GPA, 3.78 Cumulative GPA**
- **Graduated with High Honors**
- **Experience**: Senior Capstone Project Team Leader, winning "Most Innovative Project 2009", extensive autonomous robotic design and implementation experience.
- **Societies and Clubs:** Tau Beta Pi: Vice President for 08/09 year, ASME: Activities Co-Chair and Senior Representative for 08/09 year.
- Documented very high aptitudes: generating a rapid flow of ideas (80th percentile), inductive reasoning – from the particular to the general – (95th), analytical reasoning (80th), structural visualization (99th), and ability to

resource estimation, and generation of technical write-ups.
- Applied project management skills to estimate project schedules, assess resource requirements, cost estimations, project feasibility, propose technical solutions including detailed write-ups, and validated alignment with AOP, STRAP, and SBU direction, to prepare ROMs, RFQs, and RFPs to win future business.
- Gained an in-depth understanding of military, aerospace, and defense customers' needs through direct engagement to define opportunities and customized technology solutions to meet specific customer needs.
- Attended technical conferences to assess potential customer's and competition, providing a view of the industry's technical direction and future needs.

Technical Project Manager

EaglePicher Inc. Burlingame, CA 9/2018 – 9/2019

- Led the development and implementation of a smart battery system for Lockheed Martin's AOEW project through hands-on management and leadership of a 6-person team from prototype to design validation testing.
- Developed and executed recovery plans, coordinated with multiple functional groups, and negotiated with the customer to ensure satisfaction and set expectations during operational and development issues as well as during the preparatory phase of NAVSEA S9310-AQ-SAF verification tests.
- Provided direction and leadership for multi-disciplinary engineering and operational teams to complete project deliverables, maintained customer satisfaction and achieved timely, quality completion of project CDRLs and deliverables, meeting forecasted targets in accordance with customer contracts and specifications, with a strong emphasis on engineering, operations, and management coordination.
- Documented and tracked compliance with customer requirements and assisted in the development of technical solutions to address identified development gaps.
- Translated project milestones and KPIs into developed project plans, communicated and collaborated with internal and external stakeholders to provide visibility of the status of project deliverables while managing expectations.
- Monitored and reported on the financial status of the project.

remember designs (99th).

CERTIFICATIONS

Certified SolidWorks Expert
Certificate ID: C-GM95EE8DNE

Certified SolidWorks Simulation Professional – FEA
Certificate ID: C-58B8GQXSLR

Google Project Management
Coursera Certificate: UPYUU5BGXNBH

9 Professional and 5 Associate SolidWorks Certifications

Tau Beta Pi - National Engineering Honor Society

Engineer-In-Training
Certificate No. EIT 136819

9-Time FAI World Record Holder

Published Author in *Parachutist* magazine.

Eagle Scout
Boy Scouts of America

SKILLS SUMMARY

Product Development
Concept, design, DFM, prototyping, analysis, DFMEA, testing, validation, review, manufacturing layout, final assembly, quality, and cost reduction

CAD and Analysis Tools
SolidWorks, SolidWorks Simulation, Ansys FEA

Robotics
FANUC, KUKA, UR, Rethink Robotics, Epson, Cognex Vision, trajectory planning, end effector design and integration, control algorithms, kinematics & dynamics

Firmware and Embedded
C++, C#, V+, TwinCAT, Arduino, Galil DMC, SpEL, Ladder Logic

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Mechanical Engineer

Lead Automation Engineer

Jabil Inc. San Jose, CA 9/2017 – 7/2018

A global leader in contract manufacturing innovating automated manufacturing to reduce mass production costs.

- Led a five-person design team in the development of 6-axis robotic arm work cells and multi-use end-effectors for automated large-scale production of medical and technology hardware.
- Utilized conceptual design and validation techniques to create end-effector tooling, fixturing utilizing vacuum and pneumatic grippers, transfer modules, and compliance tooling to support high-volume mass production lines.
- Wrote embedded and PLC software for assembly line 6-axis robots and PLCs using programming languages such as C#, SpEL, and ladder logic.
- Worked closely with senior management to align project milestones and KPIs, translating them into detailed project timing plans using MS Project and Visio, and effectively communicating the status of project deliverables while managing stakeholder expectations.
- Collaborated in the development of a product validation tool using Cognex Vision and C++.
- Characterized brushless motors and motion controllers for dual-axis manipulation (ASC and Bosch).
- Validated prototype designs using cutting-edge additive manufacturing, including Poly-jet and ABS.
- Mentored junior-level engineers in the areas of mechanical and electrical design and drawings.
- Leveraged extensive experience in SolidWorks to update team best practices for engineering drawings.

Mechatronics Engineer, Advanced Product Dev.

Think Surgical Inc. Fremont, CA 11/2016 – 8/2017

Developing the next gen and manufacturing the only active tracking robotic surgical system for orthopedic surgery.

- Led the initial development of robotic-arm support assemblies, utilizing advanced mechanical design principles in SolidWorks and expertise in component and motor selection.
- Defined robotic joint space and end-effector tooling in collaboration with the software development team.
- Generated detailed drawings and oversaw the fabrication of machined and additive manufactured (CJP) parts.
- Spearheaded the procurement and establishment of a new prototype, development, and testing lab.

Software Exposure

C, C++, Python, Kotlin, MATLAB, SQL, HTML, CSS, PHP, JS

Client-Facing

Clear communication, emotional awareness, problem solving.

Systems and Automation

UAV automated control, hardware and software control systems, mechatronics & electro-mechanical systems, PLC programming and control, IIoT

Project Management

MS Project, WBS, SOW, CDRLs, KPIs, resource management, process improvement, budget and risk management

Electronics

Circuit diagrams, board design, grounding, DC analysis, validation, debugging.

Fabrication

Additive mfg, laser cutters, mills, lathes, CNC, soldering, and hand tools

Battery Design

Thermal and runaway mitigation, BMS architecture, system integration

Battery Safety

S9310, SG270, UN/DOT 38.3

Standards

UL, CE, SEMI, IEC, FDA, OSHA, ASME, ISO, NEMA, FAA, IEEE, MILSTD-810, IP-xx

Mechanical Engineer

Qylur Intelligent Systems Inc. Palo Alto, CA 9/2010 – 8/2016
A technology and security company developing an automated, multi-user, x-ray baggage scanner.

- Utilized mechanical engineering techniques to design and test prototype test fixtures, develop technical specifications, and generate manufacturing drawings per ASME Y14.5-2009, resulting in reduced manufacturing costs through collaboration with suppliers.
- Drove mechanical design refinements of autonomous x-ray scanning machines from prototype through beta production. Generated and implemented PLC software for a power distribution network.
- Managed project timelines, cost schedules, and KPIs, overseeing the integration of multi-tiered software architecture into an automated scanning machine.
- Characterized, selected, and debugged various components, including servo controllers, stepper motors, power supplies, electrical grounding, X-ray detector arrays, and computer systems.
- Developed and implemented safety protocols for physical interlocks, service bypasses, and power distribution to meet UL, CE, FDA, NEMA, and OSHA standards and certification.
- Managed the initial production run for multiple mechanical sub-assembly production lines in Israel, establishing protocols, designing test fixtures, and deploying automated systems at multiple international locations.

Analyst, Mechanical Engineer II

Alliant Techsystems Inc. Goleta, CA 7/2009 – 6/2010
Now Northrop Grumman Innovation Systems, an aerospace and defense contractor.

- Performed structural FEA and design optimization of deployable aerospace solar arrays using ANSYS.
- Drove design improvements and ensured compliance with customer specifications and requirements for mechanical components.
- Delivered technical reports of part and assembly analysis ensuring timely completion of client's CDRLs.

CERTIFICATIONS (cont)

Certified SolidWorks Professional – Advanced Sheet Metal
Certificate ID: C-QNH93N2UWM

Certified SolidWorks Professional – Advanced Surfacing
Certificate ID: C-ZXZGNUWU8M

Certified SolidWorks Professional – Advanced Weldments
Certificate ID: C-8DAF78S28Y

Certified SolidWorks Professional – Advanced Mold Tools
Certificate ID: C-6SHD6MY9WE

Certified SolidWorks Professional – Advanced Drawing Tools
Certificate ID: C-RTSUHRGNXH

Certified SolidWorks Professional – Model-Based Design
Certificate ID: C-T6GEKCPL4A

Certified SolidWorks Professional – CAM
Certificate ID: C-2AH3CFBMUQ

Certified SolidWorks Associate – Additive Manufacturing
Certificate ID: C-8ACDRVN5SZ

INDEPENDENT PROJECTS

MQTT Client and Arduino PC controller

(git: remote switch)

- Deployed an ESP8266 controller to act as an MQTT client to awake or power on or off my computer.
- Algorithm includes handling, cleaning, and inspecting incoming messages, maintaining user sessions and settings during system resets (deep sleep), and performing memory read/write and checksum, and connection to a router as well as an MQTT broker.
- Written in C++
- Board schematics and layout developed in ExpressPCB software
- Enclosures 3D printed in ABS and modeled in SolidWorks

Android Altimeter Project (git: altimeter)

(git: altimeter)

- Deployed as a test bed to read in built-in Android sensor inputs and output converted results to screen.
- Written in Kotlin