MATT FAUSS
ROBOTICS ENGINEER

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PERSONAL PROFILE

Creative, multidisciplinary engineer passionate about tackling new technical challenges. Skilled in Object Oriented software development for high level platforms and low-level embedded systems. Mixed signal circuit design. Mechanical design and prototyping.

KEY SKILLS

- C, C++, C#, Objective C, Java, PHP, VB, Python, Keras, TensorFlow
- USB, RS485, CAN, TCP, UDP, WiFi, SPI, I2C
- RTOS, DirectX, OpenCV, Git
- AI, Machine Learning
- Kinematics, Dynamics, Controls
- Solidworks, Altium, Matlab
- Mill, Lathe, CNC

WORK EXPERIENCE

Quartet Mechanics - ***Robotics Engineer consultation*** ***2012 - Present***

Semiconductor fab automation tool development:

- Motion controller and drive for hoist trolley with electric differential for turns
- LIDAR for obstacle avoidance
- Camera synchronized with motion for positioning trolley to station marks with QR code.
- E84 and smart tag interfaces to stations.
- Host server for managing track with multiple hoists as clients over WiFi.

IPGrip - ***Software Engineer consultation*** ***2014 – Present***

All software for systems using high-speed cameras and lasers to detect particle size and concentrations in fluid flow in real-time.

ADEM - ***Software & Hardware Engineer consultation*** ***2010 - 2018***

Developed end effectors for wafer handling robots and wafer aligners.

E Systems / BriteLab - Software & Hardware Engineer consultation ***2012 - 2014***

Developed automation and test hardware and software.

Sunstream - Software & Hardware Engineer consultation ***2013 – 2014***

Developed hardware and software to allow operation of boatlifts over WiFi on mobile devices including network discovery, live firmware updates from server. Developed all the code for the server back and front ends

Handcraft & Irony Wines – Mobile App Development ***2012***

Developed IOS app for pairing wines using info from XML database and humorous app for adding wine and other embellishments to photos with social media sharing.

Elliott Management Consultants – Software & Hardware Engineer consultation ***2012 - 2014***

Developed IOS apps for weatherization training and hardware for control of their test houses over WiFi.

Multimetrixs - Software & Hardware Engineer consultation ***2001 - 2010***

Worked primarily with scientists to transform lab experiments into marketable products.

- Multi-probe wafer scanning metrology system
- Extensive algorithms for frequency and time domain analysis
- Thin film sensor for in-tool CMP process monitoring - Mixed signal design with DDS based excitation up to 500MHz and sense circuitry for low noise, 24bit, RF gain / phase analysis

Smart Machines / Brooks Automation - Senior Software Engineer ***1995 - 2001***

Developed all the firmware for 3 to 5 axis robot controllers including the following:

- Motion control & path planning with optimized trajectories
- Proprietary language engine with batch scripting and TCL for user extensions
- Intelligent error handling with call trace and system snapshot
- Data types all inherited from base class with methods for streaming
- Ported to multiple operating systems

Responsible for control tuning, diagnosing system problems, metrology, customer engineering support, and on-site installations.

Trust Automation – Engineering Consultant ***1993 - 1996***

Consulted for clients as an employee of Trust Automation. Clients and Projects Included:

- **Conner Peripherals**
  New optical push-pin technology for hard drive servo track writing outside of clean room.
- **Sonic Sensors**
  Automotive airbag inflator inspection system for Morton International using EMAT ultrasonics to characterize the integrity of inflator welds.
- **LAM Research**
  Automation for process tool
- **Davis & Davis**
  Windows application to control 8-axis carpet tufting machine from HPGL designs.
- **JR Johanson**
  Electronics and software for 3 types of machines that measure properties of bulk solids.

Reisinger Engineering – Mechanical Engineer ***1991 – 1993***

Mechanical and electrical design of product, tooling, and automation

PERSONAL PROJECT

30 DOF 6 foot tall Biped Robot

Distributed motion control over CAN bus, remote control over WiFi, & stereo vision with head tracker

EDUCATION

Mechanical Engineering – Cal Poly, San Luis Obispo
Programmable Logic Design – Santa Clara University Extensions
Machine Learning – Stanford University (online course)
Deep Learning – Coursera (online course series specialization)