

Eric Douglas Tischer

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Electric Car experience:

Designed and built my own 3 phase inverter to run Siemens/Ford 90hp AC motor June 08 to June 09

- My water-cooled inverter runs vector torque control; produces 150lbft, 0-8500 rpm, produces 320A x 3 phase @ 200v.
- Designed and built my 2001 VW Passat EV conversion;
About 2000 miles traveled so far. 100mph top speed. Electric power steering, water cooled motor, regenerative brake.
- Produce and sell an adapter and coupling kit for Ford Siemens motor.
- Developed current/torque/regen control algorithms for a motor with no nameplate data using data acquisition system.
<http://etischer.com/awdev/>

Recent Work Experience:

Solyndra, Fremont California. www.solyndra.com

Feb. 08 to present

Cylindrical shaped photovoltaic solar panels

- **Sr. Controls Engineer.**
Currently building control systems for production equipment.
- Tube Transfer system. 8 of these machines feed every sputtering tool in Solyndras factory. 8 servo axis transfer tubes from trays to ceramic carriers. I was the only controls engineer, electrical engineer, programmer and HMI developer designing this tool.
- Robot enclosures. 10 of these systems safeguard all of Solyndra's Back End production lines. I was the lead engineer designing robot cell safety, autonomous guided vehicle SMEMA interface, and control systems.

Drivex, Livermore California. www.drivex.com (A company of 3 employees)

Feb. 02 to Feb. 08

Drivex engineers custom control systems for industrial machinery.

- **SCADA Developer**, Generating **Touch Screen Graphics and Data Acquisition systems** for Prototype, Production and OEM Machine manufacturers. "Supervisory Control And Data Acquisition". For examples of my GUI development please visit <http://www.drivex.com/2008/program/hmi/>
- Programmer of Logic Controllers. "Bringing the Iron to Life, Safely" using **IEC 61131** standard practices.
- Advanced programmer of Motor controllers, specializing in **precise torque and speed control** for high speed material handling, tension control, and winder applications.
- Here are some controls projects for which I have been: manager, lead engineer, programmer, and fabricator.
 - PLC and HMI programmer for 5 layer **blown film** line with **flying shears**, used for making printed potato chip bags.
 - PLC and HMI prog. for 7 chamber vacuum system with flying shear, used for **sheet metal solar cell** manufacturing.
 - Programmed 8 PLC racks of I/O and HMI for a machine manufacturing "**warm superconductors**".
The control system for this project was featured in Siemens & Control Engineering Magazine, and I was a guest speaker at Siemens Automation summit, 2007. HMI featured user modifiable state machine logic.
 - Drive programming for a machine that perforates, cuts, creases and winds 500' rolls of drywall tape every 30 seconds.
 - Implementer of SQL Server data acquisition system for a Military spec **Carbon fiber** manufacturer.
 - PLC and HMI programming for an Optical Coater. Developed Serial Comms driver for an IC/5 Deposition controller.

FormFactor, Livermore California. www.formfactor.com/

Summer 00, 01

FormFactor produces beds of microspring contacts (probe cards) used for testing wafers.

- Design and fabrication of a tip replacement tool used to weld a blade to the end of an eyelash sized spring.
- Completed fabrication of a wafer processing station, and controlled temperature bath.
- Design and fabrication of FormFactor's "replacement springs" for C4 and T2 product line which involved:
Finite Element Analysis, Generating wafer masks, Photolithography of "elephant shaped" springs on silicon wafers.
- Operation of a laser cutting tool, plastic welder, and milling machines. Class 100 clean room experience.

Programming Skills:

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- **HMI (Human Machine Interface):** Expert user of the following GUI development software: **Siemens WinCC, Allen Bradley RSView32 & Studio, WonderWare** (Intouch, InSQL, & Active Factory), **LabView** "Advanced Certified"
 - **PLC (Programmable Logic Controller):** Expert user of: **Siemens Step 7, Allen Bradley RsLogix 5000**, 500 and 5; National instruments compact field point.
 - **Networks:** DeviceNet, ControlNet, Modbus, Ethernet, Data Highway, Eurotherm FiberLink, Profibus. RS232
 - **Motion:** **Allen Bradley** Sercos Servo, Kinetix 2000 Systems; **Eurotherm/Parker/SSD** "Drive system designer"

Personal Projects: for pictures and details please visit www.etischer.com

- Conversion of a '72 MG Midget (British convertible) to Mazda 12a **Rotary Engine** and 5-speed gearbox. ('98)

- Conversion of an air-cooled Porsche 914 to Subaru six cylinder water-cooled engine. ('01)
- Design and fabrication of a "Porsche 901 transaxle cable shifter system" to replace the original crude shift linkage. ('02)

Education: **California State University Chico**

Graduated: Dec. 2001

Major: **Mechatronic Engineering**, a combination of Mechanical Engineering and Computer control systems.

- Mechanical course work: Machine Design, Strength of materials, Finite Element, Statics, Dynamics, Failure Analysis.
- Electrical course work: Design of a single wire data transmission protocol and hardware. Fabrication and programming of a working computer motherboard. Programming programmable gate arrays.
- Mechatronic course work: Designed and built proof of concept CNC type projects. My senior project was a computer controlled saw which feeds, measures, clamps and cuts metal tubing.
- First place in 1999 and 2000 National **Steel Bridge Design Competition**.
Design and fabrication of a steel bridge with considerations to weight, cost, deflection, and construction speed.

Hobbies:

- Building **custom molded fiberglass** camera cases, laptop cases, and car parts.
- International travel, the most unusual place I've been is Chernobyl, Ukraine.
- Applied to be on TLC's Junkyard wars.
 - Self taught Aluminum Mig Welder
- Lastnightphoto.com is my photography business.
 - Building underwater camera enclosures.