**Zexi Sun**

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OBJECTIVE

Automation Control, Power System, Power Electronics, Embedded system

EDUCATION

University of California,Santa Cruz, CA

Master of Engineering, Electrical EngineeringSeptember 2016-June 2018

GPA: 3.47

EXPERIENCE

Nanjing Yunya Automation Co.,Ltd,Nanjing, China August 2015-August 2016

Firmware Engineer

**Driver Circuit Design of Segment-Type Liquid Crystal Display**

* Implemented microcontroller PIC18F25K20 to control the circuit to display temperature, time, voltage, power and so on in 4 numbers from 0~9 simultaneously. Data were transmitted from different inputs(sensors).
* Built PCB in 12cm\*12cm, small enough to be applied in different situations.

**Supervisory and Data Acquisition System Design**

* Established a user-interface system in the upper computer. Monitored voltage, current, power and on-off states in the monitor room.
* Collected data from 7 small power stations, 12 generators each station
* Utilized Siemens SIMATIC WinCC in this system. Operators can easily read data from the upper computer and control the generators in the monitor room.

PROJECT

**Inverter output filter**

* Implemented active damping method to reduce total harmonic distortion from 15% to 5% in a three phase-inverter with a current control pulse width modulation.

**Space Vector Modulation Inverter**

* Applied space vector pulse width modulation method to generate switching signal in a three-level inverter converting 120V DC source into 120V AC source.

**H-bridge Inverter**

* Utilized a digital signal processor TMS320F28335 to control an H-bridge inverter with 100V DC input and 100V AC output.
* Developed program via MATLAB Simulink.

**Three-level reduced-parts-count rectifier**

* Implemented hysteresis current regulator to control the switching signal to convert a 660V three phase AC source into a three level DC output.
* Built the circuit with only 6 transistors instead of 12 transistors, which has lower cost.

SKILLS

MATLAB Simulink, AutoCAD, PSCAD, Altium Designer

Languages: C, Java, Python