# Adam L. Humphreys

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## FREELANCE DESIGN PROFESSIONAL

*Recognized for failure diagnoses, repair, design, and prototyping. Skilled in circuit design and PCB development. Experienced in small scale AVR microcontroller development and renewable energy systems. Excellent interpersonal and communication skills with the ability to interface between technical and non-technical groups.*

## KEY COMPETENCIES / STRENGTHS

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| *PCB Design Software* | *Schematic Diagramming/Implementation* | *Troubleshooting/Problem Solving* |
| *Failure Evaluation/Analysis* | *Component Cost Assessment and Evaluation* | *General Microcontroller Development* |
| *Machine Maintenance and Repair* | *Prototyping* | *Good Team Player* |

## HIGHLIGHTS & ACHIEVEMENTS

- ► Designed, developed, and programmed a multichannel power control node Printed Circuit Board Assembly (PCBA) for a Kickstarter project, including concept, diagram, layout, and Build of Materials (BoM) for manufacturing. The resulting boards were smaller, less expensive, and more versatile than their previously available counterparts.
- ► Designed, developed, assembled, and programmed a small production of 8 fully automated and dynamically timed watering valve prototype units for use with plant water reservoirs.
- ► Planned, installed, and wired two complete home based electrical grid tie solar power systems using OutBack Power inverters and controllers alongside MidNite Solar controllers and components. One system included wind power installation and integration into the system.
- ► Repaired hot tub after catastrophic controller board failure due to burnout of the main element relays failing due to cold solder joints likely developed by heat from deteriorating relay contacts. Replacement board or details being unavailable, traces were followed manually and extended off-board to control external mercury displacement relays ensuring a lasting solution.
- ► Designed, developed, fabricated, and programmed an automated microcontroller based greenhouse controller prototype.
- ► Designed, developed, fabricated, and programmed a DC kilowatthour logger prototype.
- ► Diagnosing and replacing water seals, start capacitors, contactor relays, and heating elements for hot tubs, baptistries, air conditioning compressor units, and fans.
- ► Designed, developed, fabricated, and programmed stuffed animal for recreation featuring curve based twinkling LED star-field effects and alternating electroluminescent wires with user serviceable battery.

## PROFESSIONAL EXPERIENCE

**Self-Employed** **Royse City, TX** **2012-Present**

*Commission based repair, development, fabrication, design, and installation*

***Freelancer***

- • Design, program, and/or fabricate and assemble electrical circuits and fixtures for customers and in-house usage
- • Generate and issue estimates for potential customers
- • Install, wire, and maintain, solar power systems
- • Provide product support and training where necessary
- • Ensure customer satisfaction
- • Manage time, stock, budget, and online listings
- • Order, inventory, and evaluate parts and supplies
- • Evaluate performance and sales
- • Design, develop, and prototype for in-house usage and sale
- • Manage, maintain, update, and repair sewing and embroidery machines

## EDUCATION

**BA in Arts and Technology (Summa Cum Laude)**, *University of Texas at Dallas*, Richardson, TX
**Associate of Arts (Summa Cum Laude)**, *Collin County Community College District*, Plano, TX

## TECHNICAL SKILLS

- PCB Layout and Design
- Troubleshooting/Problem Solving
- Prototyping
- Electrical Soldering
- Machine Maintenance and Repair
- AVR Microcontroller Development
- C++ Programming
- Multimeter Usage
- Adobe Photoshop
- Computer Repair
- OpenOffice.org Writer, Calc, Impress
- Microsoft Word, Excel, PowerPoint

## HONORS ORGANIZATIONS

- Golden Key International Honour Society
- Honors Society of Phi Kappa Phi
- Phi Theta Kappa Society
- The National Beta Club