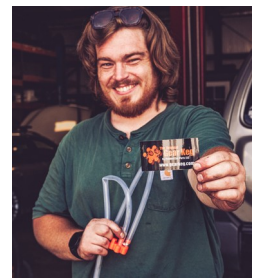


# Nicholas A. Lombardy

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## Work Experience

### **Entrepreneur** ◦ 2023 – Present

I left Canary Systems to build a large glass block wall video game for the reopening of The Coin-Op inside of Boneyard Chattanooga (see “Glass Block Wall Game” on 2<sup>nd</sup> page). After finishing that project, I took some time to start Printed Car Parts LLC. So far, I’ve released my first product: [The Gear Keg](#). It’s a tool for filling transmissions, differentials, and transfer cases with gear oil. To date, I’ve shipped over 450 units. Aside from some help with photography and videography, I am performing all functions of the company including marketing, sales, production, and R&D.

### **Canary Systems** ◦ 2019 – 2023

Created Python, SQL, and PowerShell scripts to automate data collection, transition, and organization. Installed, programmed, and performed troubleshooting on geological monitoring equipment. Managed off-grid solar power installations. Maintained internal and customer facing software installations and environments. Provided remote software training and troubleshooting sessions to customers and internal staff. Contributed innovative problem solving ideas and strategies to my team.

### **Western Electric** ◦ 2021 – 2022

Responsible for engineering final solutions and production methods for a new home Hi-Fi amplifier. Contributed to UI and update components of software. Engineered an automated power cycle testing system with logging and video recordings for each test. Coordinated orders and inventory from multiple vendors and contractors. Repaired and operated a variety of modern and repurposed industrial manufacturing machines utilizing pneumatic, electrical, chemical, and heating systems.

### **ring-u** ◦ 2017 – 2019

Contributed to hardware and software development, interface design, testing, and ongoing product enhancements. Created [tutorial videos](#) on configuring different components of a ring-u phone system. Have customer reviews posted online that directly mention my outstanding technical support. This position helped advance my technical skills and broadened my experience with remote tech support.

### **Electric Bike Specialists** ◦ 2016 – 2017

Expanded knowledge of electrical systems and batteries. Built a routine and reputation for direct customer interaction. Led sales for several months in a row. Learned the difference between what I would want as a technology focused individual and what customers wanted as end users. This understanding helped influence development at ring-u.

### **Independent IT Consultant** ◦ 2010 – 2018

Experience with technology consulting started with tutoring and game console repair. This quickly moved to business desktop support, server administration, and network architecture design. I worked on several programming projects, built custom desktops and servers, and repaired a vast array of small business technology. I developed a reputation as the guy to call when something was broken, and I’ve rarely shied away from a challenge.

# Projects

## Glass Block Wall Game

Installed thousands of addressable LEDs on a large glass block wall in Boneyard Chattanooga. Hand-built control boards to provide logic-level shifting and control them from ESP32 compatible microcontrollers with onboard Ethernet. Wrote software to play a Tetris-inspired game on the glass block wall utilizing Node.js to talk with the WLED API and a front-end for a display in the console written in Three.js. Developed a unique controller to play the game using a glass block as the interface. This controller utilized 3d printing, programming an Arduino Mega, carpentry, and plasma cutting steel.

## **3D Surveying and CAD**

Worked on projects involving point cloud modeling, creating interactive 3D reports for resource stockpiles using data acquired through Trimble products, and working with large, fly over, LIDAR scans of the City of Chattanooga. Have used CAD and 3D printing to design brackets and functional solutions to physical problems.

## Gauge Cluster

Wrote software to display Salesforce data on a physical gauge. Utilized experience with Linux, embedded computers, Node.js, and database integration. Also wrote software that displays data collected through an Arduino microcontroller on a JavaScript rendered, digital gauge cluster in real time.

## **Vehicle Powertrain**

Built 2 project vehicles that incorporated stand alone engine management to add electronic fuel injection and independent, sequential ignition to vehicles originally equipped with mechanical injection and a distributor. Utilized parts from General Motors, Volvo, Honda, Mitsubishi, and Volkswagen, and achieved seamless integration of all these systems. Soldered all electrical components together from the engine computer circuit board to building the wiring harness.

Designed and built an electric vehicle drive system that incorporated a 72v DC circuit for the powertrain; a 110v AC circuit for optional accessories; and multiple, independent, 12v circuits for lights and stereo equipment. The vehicle, built for a private business, was in near daily service for a period of over 5 years before being retired due to physical damage unrelated to the systems I installed.

Project leader for three engine swaps. Experienced changing clutches, differentials, and transmissions. Very comfortable working with tools and repairing major mechanical systems.

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Thank you for your consideration. I'm excited about the future and hope to be working with you.

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