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Timothy J Newman

Summary

Experienced Engineering Professional with proven track record of successful software + hardware + system integration project execution. Currently holds a Bachelor of Science in Electrical and Computer Engineering from California State Polytechnic University *Magna Cum Laude*, very recent completion of TrueCoders coding bootcamp, holds multiple patents.

Skills

C/C++ **C#**
VB/VBA **Python**
Excel

Professional Accomplishments

Data Collection Platform: Technical Lead

- Design, develop, and implement the system for unit-under-test video recording and ground-truth data logging for SIL testing
- Design, develop, and maintain the C++ application for connecting and synchronizing to various subsystem and interfaces: UDP, RPC, CAN, various subsystem APIs
- Generate documentation for system setup, calibration, and usage; Excel plotting of data log for immediate integrity check of ground-truth system
- System has been replicated for several projects in US, Europe and Asia

Technology Demonstration and Development Vehicle: Owner

- Integrate advanced development technologies into a drivable vehicle for development test and demonstration
- Employ head/eye/gaze tracking and radar safety systems to develop new concepts and products
- Use CAN and Ethernet to network PCs with vehicle ECUs, as well as provide interactive software on tablet PCs
- Vehicle has been shown at CES as well as other conventions and customer sites

Human Machine Interface Processor: Owner

- Use embedded micro-controller to provide a robust technology bridge between UX and Advanced Safety products, as well as a host for advanced concepts
- C/C++ project interfacing with SWCAN, HSCAN, J1850 Class II, LIN, I2C, SPI, UDP, plus discrete IO and A/D converters
- HMIP project has been replicated and customized for multiple CES concept vehicles and customer vehicle projects

LCD Scan Converter: Developer

- Develop an interface board to allow generic VGA images to be transmitted to transparent LCD cells used in Head-Up Displays
- Use a PLL to sync to VGA signal and A/D converters to acquire color pixel data
- Use PLDs to extract section of VGA image to be displayed on the HUD; design the row/column driver circuitry for addressing the LCD
- Project produced very sharp graphics on the HUD and allowed rapid and simple prototyping of graphics for designers and customers

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Employment History

Dec 2017 to Jun 2020	Advanced Engineer III	Aptiv, Kokomo, IN
May 1997 to Dec 2017	Advanced Engineer II	Delphi, Kokomo, IN
Jun 1995 to May 1997	Advanced Engineer	Delco, Kokomo, IN

Education

Bachelor of Science, Electrical and Computer Engineering (*Magna cum Laude*) — California State Polytechnic University, Pomona, CA

Advanced Technical Training: Full stack software development — TrueCoders, Birmingham, AL

Patents

Issue Date	Number	Title of Invention/Technique/Process	Inventors/Authors
Sep 11, 2011	US 8,022,346 EP2233962	Automatic fault detection and laser shut-down method for a laser-generated windshield display	Newman, et. al.
Sep 6, 2011	US 8,013,539 EP2157833	Low-cost drive system for an LED triad	Newman, et. al.
Aug 17, 2010	US 7,777,778	Illumination and imaging system and method	Scharenbroch , et al.
Mar 9, 2010	US 7,675,296 EP1897744	Method and apparatus for detecting the head pose of a vehicle occupant	Lambert, et. al.
Dec 05, 2006	US 7,146,276 EP1634776	Method for determining driving task demand based on speed variability	Smith, et. al.
Oct 04, 2006	US 7,646,422 EP1908396	Illumination and imaging system with glare reduction and method therefor	Newman, Kisacanin
Aug 09, 2005	US 6,926,429	Eye Tracking / HUD System	Barlow, et. al.
May 12, 2005	USPAP2005-01001911	Imaging System and Method for Monitoring an Eye	Harbach, et. al.
Feb 22, 2005	US 6,859,144	Vehicle Situation Alert System With Eye Gaze Controlled Alert Signal Generation	Newman, et. al.
May 14, 2004	EP1484014 13.01.2005; US 6,989,754	TARGET AWARENESS DETERMINATION SYSTEM AND METHOD	Newman, et. al.
Nov, 2004	DP-487073	Integral Projection Pixel-Based (IPP) Technique for Camera Illumination Adjustment	Hammoud, et. al.
Nov, 2003	DP-475011	Synchronized Illumination for Electronic Rolling Shutter Imagers	Scharenbroch, et. al.
Mar 28, 2000	US 6,043,937	Head Up Display System Using a Diffusing Image Plane	Hudson, et. al.

References

References are available on request.