

Andrew J. Dobson
Senior Associate

Professional Profile

Mr. Andrew Dobson is a Senior Associate for Exponent's Technology Development practice. He has an extensive background in electrical engineering, with over 17 years of experience in system design, application engineering, and failure analysis. In addition, Mr. Dobson has extensive computer systems experience including automotive and wearable computers. His programming skills include numerous high and low level programming languages and he has experience in most major operating systems.

Since joining Exponent, Mr. Dobson has used his knowledge of Controller Area Networks (CAN), Universal Serial Bus (USB), Global Positioning Systems (GPS) and embedded systems programming in several military projects involving Personal Digital Assistants (PDA) and low power microprocessors. He has also used his expertise in rapid prototyping, analysis, and design in a variety of projects both large and small, ranging from a rifle-mounted input device to a vehicle data acquisition system.

Prior to joining Exponent, Mr. Dobson held several engineering positions for Land Rover North America, where he developed solutions for power-train problems encountered in the field. This included field testing of enhanced diagnostic algorithms, warranty repairs, and servicing issues.

Academic Credentials and Professional Honors

B.Eng., Electronic and Electrical Engineering, Plymouth Polytechnic, Great Britain, 1990

Patents

Patent 6,899,539: Infantry Wearable Computer and Weapon System, 2005 (with L. Stallman, J. Tyrrell, T. Hromadka, III, N. Emiro, and D. Edwards).

Selected Project Experience

Gunner Display Unit-Replacement (GDU-R). Developmental effort to build a portable wireless device, utilizing Bluetooth, to display system information sent from a remote PDA.

Medical temperature acquisition system. Implementation of a portable, non-invasive medical shunt temperature monitoring system.

Vehicle data acquisition system. Developed a vehicle data acquisition system using the CAN vehicle network and used this for recovery of data during controlled vehicular accident reconstruction.

Multi-functional Agile Remote Controlled Robot (MARCbot) servo arm controller. Designed a microprocessor based replacement servo controller on the MARCbot robot system, resulting in lower cost and improved manufacturability over previous implementations.

Wireless Building Monitoring System (WBMS). Development of a portable, battery-operated, wireless system, utilizing Bluetooth, to monitor building stability during rescue operations.

Advanced Robotic Controller (ARC) battery box GPS interface. Development of a battery-operated portable GPS system to augment the PDA-based ARC soldier system.

Scorpion situational awareness system. Development of a microprocessor-based device utilizing USB for message handling for the helmet mounted Scorpion system.

Land Warrior v1.0 Weapon mounted user input device. A microprocessor device, having user selectable controls and using USB communications to the Land Warrior v1.0 system.

Land Warrior v0.6 CAN interface software. Development effort to create a deterministic protocol for message handling on the Land Warrior v0.6 system.

Professional Affiliations

- Association for Computing Machinery (member)
- Institute of Electrical and Electronics Engineers—IEEE (member)
- IEEE Computer Society (member)