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| **James Doolin**  Electronics/Hardware Engineer | Drysdale View, fenny bentley, ashbourne  derbyshire, de6 1la  jamesdoolin@hotmail.COM  07875463860 | |
| **Personal Statement**  I’m an adaptable, creative and resourceful Electronics Engineer with over 9 years’ experience in designing robust hardware for embedded systems including video capture, video generation, data acquisition and control systems including sensors.  Trained by a world leading technology company, Honeywell and degree qualified.  Experienced working in small and large teams, I’ve had varied roles in product design and development.  I’m looking to develop my expertise and seek assignments in design, development and validation of embedded products within a forward thinking technology driven company which has a career path to a senior engineer’s position.  I’m hard working and conscientious individual who tries to effectuate my work with enthusiasm.  **EDUCATION**  **Electrical and Electronic Engineering, BEng** September 2009 – May 2014  **University of Derby (IET Accredited)**  First Class  **Systems Engineering, ONC** September 2007 – May 2009  **New College Nottingham**  Double Distinction  **CORE KNOWLEDGE**   * Ability to provide practical solutions and work effectively in a team environment * Thoroughly knowledgeable in all aspects of hardware design and development. * Analog, digital, and mixed-signal product design based around MCUs and FPGA Tech * Development of embedded software and/or VHDL for these products. * Experience of PCB design, development, fabrication and assembly * Design for mass production * Component engineering, cost reduction, and reliability improvement. * Applications and customer support * Strong expertise in debugging tools and troubleshooting * Good grasp of high speed multi-layer PCB design, signal integrity, power integrity and EMC * Good knowledge of circuit analysis tools such as PSICE simulation for design and verification * Good abilities in electronic assembly troubleshooting and resolving quality related issues * Wide knowledge of FPGA, Processor and MCU architectures * Good knowledge of FETs and other electronic power switching devices * Proficient with electrical hardware test equipment (oscilloscopes, logic analyzers, spectrum analyzers etc.) * Ability to write requirements, design specifications, User documentation, operation manuals, troubleshooting guidelines * Chair design reviews within the team * Establishing vendor relationships   **SKILLS**  **Analog Electronics:**   * Low power, low noise DC to DC Converters * ADCs/DACs * Phase locked loops (PLL) * Temperature control, pressure control, motor control * ES   **Digital Electronics:**   * Clock Generation * FPGAs * MCUs * Buffers/ReDrivers * Memory – SDRAM, EEPROM, Flash   **Design:**   * Schematics Capture * Spice Simulation * PCB Place and Route * Soldering * Prototyping and Testing (power, halt, functional) * Design for environmental testing (EMC, thermal, mechanical) * Design for manufacturing (SMT Process) * Verification and Validation   **Compliance Regulatory:**   * FCC (EMI/EMC) * CE * UL   **Measuring and test equipment:**   * Oscilloscopes * Logic Analyzer * Spectrum Analyzer * Function Generator * DVM * Network Analyzer   **Misc:**   * High Speed Interfaces: LVDS/SerDes, DDR2/3, PCIe * Video Interfaces: HDMI, DisplayPort, SDI * High-power: switch-mode power supplies * Low-power: sleep/standby, power-gating * Memory Debug   **Software:**   * Multi-threading; Non-blocking/asynchronous I/O * Networking (sockets, packets/streams, UDP/TCP/IP/TFTP) * IO Drivers * Revision Control: Git, TFS   **EXPERIENCE**  **Hardware Engineer**  April 2014 – Present  **Datapath,** Derby   * High Speed Digital Electronic Board Design and Verification * Hardware Tool Development e.g. USB GUIs * Bring Up and Test/Debug of PCBs – Including Automated Testing using Python * Schematic Capture and PCB Layout Design – Including Circuit Simulation * Selection, analysis and design-in of components and SoCs – Performance Analysis * Design of embedded firmware (C) and specifications for boards and interfaces * Design of low level device drivers and APIs for processor interfaces * Use of high-bandwidth scopes and analyzers to verify signal integrity and performance of boards * Developing product/performance specifications and performing the testing and reporting to allow sign-off * EMC and Thermal Testing of Products * Prepared technical documents including product specs, test procedures and test reports etc. * Train junior designers on technical designing and documentation * System Level Power Management Design – Power sequencing, power monitoring, power/current requirements and consumption calculations, load testing and power measurements * IBS Modelling – Mentor HyperLynx * Technical reviews of possible technologies and feasibility studies of 3rd party products * Power Supply Design – DC-DC Converters, Filtering and Feedback * Hardware Projects – Video PCIe capture card, standalone video processing boxes * Software Projects - USB DFU and Ethernet TFTP Bootloader, HTTP Server and USB HID control interface   **Independent Contract Projects**  Jan 2014 – March 2014   * **ARM Based Smartwatch –** OLED Watch with ARM M0+, BLE, IMU, Lux Sensor and Temp/Pressure sensor * **Wireless Charging Mouse** – PC mouse which is charged wirelessly via mouse mat. System used TI [bq51050B](http://www.ti.com/product/bq51050b) and TI BQ500511 power transmitter and receiver. * **Bluetooth RGB LED Lamp –** Circular WS2812B LED lamp board with BLE interface * **GPRS IO Controller –** Microcontroller based IO Controller with GPRS interface for control. Included Digital and Analog inputs and outputs. * HDMI USB Video Capture – Altera Cyclone IV and FX3 based HDMI video capture over USB 3.0 via USB Video Class   **Electronics and Software Engineer**  July 2014 – Dec 2014  **JCB Research,** Rocester   * Electronic Circuit Design (Analog and Digital) * Product Feasibility Studies * ESD/HALT/EMC Testing * Automated System Testing * CAN Networks – Vector Tools * Embedded Software Development – PIC and ARM * Hardware/Software Debug * R&D Prototype Project – Bluetooth (BLE) CANBus Analyzer   **ACTIVITIES & AWARDS**   * New College Nottingham Innovative Engineering Shield- 2009 – Battery-less Sensor Design * East Midlands Engineering Technician of the Year Award – 2009 * NVQ Level 3 Technical Support Engineering * NVQ Level 2 Engineering * 4 Year AVA SEMTA Advanced Apprenticeship (Electrical Engineering)   **COURSES**   * Complete Python Boot Camp * Altera Timing Analysis | | **Software Skills**  Embedded C  VHDL  Python  Function Blocks  XML  HTML  Javascript  Windows OS  Visio  **Software**  Altera Quartus  Keil uV5  Xpresso IDE  CooCox  Kicad  EagleCAD  Mentor Graphics  Altium Designer  NI Multisim  TINA Spice  LT Spice  **Microcontroller Architectures**  Arm Cortex M0,M3,M4  Arm Cortex A7, A53  **Microcontrollers**  LPC17xx  LPC13xx  LPC11xx  LPC8xx  Freescale K64F  **FPGA Architectures**  Altera Arria V  Altera Cyclone IV  Altera Cyclone V  Altera MAX 10  **Communcation**  Bluetooth/BLE  Ethernet  USB  SPI  UART  I2C  RS232  RS485 |