Theo Hatzis, MSc

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Summary

Summary Engineer with 30y++ experience in hardware development with OrCAD, Protel (aka Altium), Mentor Schematic capture etc., on microprocessor based applications, interfaces and sensors for medical, scientific, wireless terminals, traffic surveying equipment. In mid-career, developed the communications "outstations" equipment racks on the MIDAS subsystem that was first deployed on the UK's M25 Controlled-Motorways pilot project automatic incidents detection and variable speed limits signalling systems.

Recent freelance projects include the schematic design on 3G/4G early access devices, Validation and Design Verification on 3G and LTE Modems, PMU, PA, RF Transceivers, and post-silicon automation and manual testing on PMU, PMIC, DCDC, Charge Pumps and Buck/Boost devices, with automation in Python, C#, Teststand and LabVIEW.

Project Interests:

- Validation/Verification
  - *Component verification, Validation - DCDC, MOSFET, Battery Switches, Radar, Automotive and other Sensors*
  - *Power Semiconductor Characterization, Verification, Validation and Temperature profiling*
  - *Bench automation with Python, C# and Teststand*
  - *Battery performance testing. Power Consumptions*
  - *RF and PSU related measurements*
  - *Competitive analysis and issues related work*
- Hardware Design and Development
  - *8/16/32-bit microprocessor based applications and products*
  - *Component technology selection, PCB floorpanning, Design reviews, PCB layout reviews*
  - *Interface design, Analog/digital data converters, Operational amplifier circuits. High speed circuits*
  - *Analogue design simulation with Spice*
  - *Battery power circuits, Switching, Power distribution and OR-ing circuits. Charging circuits*
  - *Transportation communications signalling infrastructure equipment, Communications controllers. Line interfaces.*
  - *Design to requirements, safety, environmental performance and Testing*

Experience Areas:

- Hardware development
  - *8/16/32 bit micros application boards, releated digital design, Analogue (ADC, DAC, S/H, OP-AMP)*
  - *Electronics Schematics design with OrCAD, Protel (or Altium), Mentor Graphics Expedition*
  - *Battery Chargers, Board power distribution*
  - *Microprocessor boards and specialised interfaces in Medical products, data communications and Scientific Instruments*
  - *RS485, V26, V29 and PCM Data Tributaries signalling circuits, Lightning protection, RS485 galvanic/opto islations*
  - *Industrial ruggidized computer tablets development, and approval for CE, EMI, SAR and Network performance*
  - *Design to requirements, Documentation, Test house liasion for CE, EMC and Acceptance*
  - *Medical and IT equipment approvals, saftey, UL, TUV, VDE, EMC, CE and Environmental performance*

- Sensors
  - *Radar Sensors, Magnetometers, Inductive loops, Gas sensors*
- Software and Tools
  - *Python (10y), C# (10y), Teststand, LabVIEW and MATLAB/SCILAB (2y)*
  - *Some lightweight software development and test e.g. with Docker, Jenkins, Cmake build tools and Pytest/Allure*
  - *Some C (microchip PIC), Arduino DUE with Visual Studio and with the Visual Micro addin.*
  - *VHDL design on mainly low-end logic circuits, such as PLD, EPLD and CPLD and small FPGA*
- Semiconductors
  - *PMIC Chipsets and DCDC validation*
  - *3G and LTE Modem platforms verification. RF and PA with PSU measurements*

Training

- Courses in RF Circuit and System Design, TestStand, LabVIEW, EMI, ESD, Spectrum Analyzer, Allegro/Cadence, TIBCO Spotfire, MSc (distinction), BSc(Hons) and HNC(BTEC)

Projects

Test and Verification Engineer for Radar Applications, Infineon Technologies AG, Oct 2020 – Mar 2021 [Hays]
- Software development, 60GHz Radar Sensors SDK and GUI tests

Validation Expert, Texas Instruments GmbH, June 2018 – June 2020 [Hays]
- Device characterization and Bench validation of DCDC converters

Application Engineer, Dialog Semiconductor GmbH, October 2017 – April 2018 [Hays]
- Mixed-signal PMIC Chipset DCDC Buck evaluation and documentation

Validation Engineer, TI Deutschland GmbH, August 2014 – September 2017 [Hays]
- Device Characterization and Bench validation of DCDC Buck, Buck-boost and Charge pump devices

Senior Baseband Designer (Digital), Intel Mobile Communications GmbH, February 2011 – January 2014 [ERL]
- Intel XMM series XGOLD 2-4G modem reference designs verification

Senior Baseband Designer (Digital), Infineon Comneon GmbH, August 2010 – February 2011 [ERL]
- Infineon XMM series XGOLD 2-4G modem reference designs verification

Hardware Consultant, ST Ericsson AT (Ericsson GmbH), Jan 2006 – Dec 2009 [Harvey Nash]
- Design and implementation of board-level power and distribution on early access FPGA based boards for 3G+ and 4G protocol stack development

Baseband Engineer, Texas Instruments A/S, Oct 2004 – Dec 2005 [WAC]
- 3G Mobile platforms designs verification. Validation test documentation and templates