Ben Kazemi
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Computer Engineer with extensive experience offering a deep understanding of key principles in computer architecture, programming and hardware design, with core competencies in the hardware - software interface.

Relevant Work Experience

2015-Present   *Contract Developmental Engineer & Embedded Systems Consultant - Bitvu Ltd, Brighton.*

Engineering a multi-channel, multi-protocol streaming encoder with legacy analogue support, utilising a novel design allowing a price point 20% of competing products, (bitvu.com/infernoheadend). Initial contract to interface an audio source to a Broadcom SoC and to control an HDMI-to-CSI IC. Remained as primary project-engineer. Main responsibilities include design and implementation of system architecture, schematic creation, and review and supervision of offshore PCB layout engineers. Key skills include:

- Python
- Embedded C
- Linux Kernel Development
- HDMI Control Development
- I2S / I2C
- Altium Hardware Design

The product has an initial order of 6K units and parts of my code are contributed to the official Raspbian repository.

Education

2011-2015   *First Class BEng (Honours) Computer Engineering, University of Sussex.*

- Comprehensively designed an award winning 8-bit microcontroller driven embedded system
- Designed, fabricated, and assembled a physical portable working case allowing multi-touch pressure and positional input data for sensors encapsulating a smartphones sides and rear surfaces, encompassing an entire project cycle from conception to completion.
- Developed firmware (C) and android applications in Android Studio to demonstrate new modes of interaction, code available on my GitHub page

2007-2009   *Three A-Levels in Electronics, Computing & Music Technology - Sussex Downs College, Lewes*

2005-2006   *BTEC Certificate in Contemporary Music - Brighton Institute of Modern Music, Brighton*

Relevant Technical Skills

Coding   I have experience working with: C, Java, Python, Haskell, Prolog, Pascal, MATLAB, LabView, SQL, VHDL, BASH and MIPS assembly. I primarily develop in a Windows and Linux environment, and have open-source experience developing Raspberry Pi Foundation and Adafruit products.

Hardware   I maintain strong circuit prototyping and assembly skills, including PCB (SMD designs using Altium), and breadboard prototyping to successfully implement designs, involving implementation of data transfer links using RS232, USB, HDMI and Bluetooth. These experiences include a working knowledge of the appropriate probing and fault finding skills necessary to develop successful hardware. I have a history of both aesthetic, and functional hardware modifications since the age of 14. I am competent at reading and designing schematics, and have acquired the skills necessary to work effectively with datasheets.

Mathematics   Two and a half years of undergraduate Mathematics courses, modules spanning from Calculus to Statistics.

Other Notable Experiences

Learning to Lead Programme – University of Sussex, Brighton. Awarded in June 2011

An intensive ten-day leadership programme run in partnership with professional management training consultancy Clemorton, followed by a year-long group project ending with a presentation to academic leaders. Article available in June 2011 Sussex Bulletin print and here: sussex.ac.uk/broadcast/read/8472

Language Teacher – Shijie Chinese-English School, Hunan, China. August – September 2006

As a member of a two-man foreign team responsible for planning and delivering classes and events to students aged 7 to 19, to strengthen cross cultural ties.

Academic Awards and Accomplishments

2015	Rohde & Schwarz Project Prize Award
2015	IET Gerald David Memorial prize Nominee
2013-2014	Best Engineering student awarded by Eurotherm by Schneider Electric
2011	Above Learning to Lead programme was accredited by the Institute of Leadership and Management, of which I am an affiliate member

Personal Interests and Projects

I hope to take a number of my projects to market by 2018. Videos showcasing these projects are in the works, but involve:

- An Android case that allows full control of the OS without the need to interact with the touchscreen, interfaced through BLE 4.0 or USB OTG;
  - (Video remains private while under patent review);
- A four-layer line-in & microphone pre-amplifier sound card 'HAT' for a Raspberry Pi, interfaced through I2S;
  - Rev 3, Rev 2, Rev 1.
- Autonomous audio and power IO selector board with SPDIF DAC, controlled by IR/WiFi/BLE
- A reactive baby light designed to gauge the child's state of calmness, helping them fall asleep.
  - Android monitor and control application, with hardware and firmware interfaced through Bluetooth.

I am able to demonstrate my projects upon request.

I have completed contract work which involved the design and manufacture of all electronics for a pirate-themed escape room at *Escape Kent* in 2017.

I have contributed towards the development of Adafruit's *DRV2605 Haptic Controller Board.*

My hobbies include learning new techologies, and I am teaching myself how to develop on FPGA's and the STM32 platform.

I am interested in teaching and have helped write Arduino workshops for 'SheCodes', a group dedicated to increasing the number of women in the tech industry. These classes can be viewed on my GitHub page.

I am a native English speaker and maintain a competent spoken understanding of Farsi. I completed a 20-week Japanese Language course in July 2013.

I frequently compose, sequence and record original compositions, and have performed live.

References - *Further references available on request.*

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