

Peter Burkimsher

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Profile

Computer engineer with broad experience technically and internationally, with deep knowledge of scripting, control systems, and networks. Independently motivated to pursue software and hardware side projects, and socially adept at meeting the needs of others. Together we can build practical, efficient solutions to satisfy your business and customers.

Technical skills

Programming languages	Scripting: AppleScript, Bash, JavaScript, Python, PHP Compiled: C, C++, C# (.NET), Java (Android), Objective-C (Mac, iOS)
Big Data	ElasticSearch, MatLab, SQL, ODBC, Tensorflow
Embedded	Arduino, ODroid, PQI Air Card, Raspberry Pi, Rockbox, Salea, Verilog
Tools	<ul style="list-style-type: none">- Control systems: LabVIEW, OSC, SCADA (WinCC OA), SECS-II- IDEs: BBEdit, Eclipse, Visual Studio, Xcode- node-modules: express, jquery, leaflet, moment, socket.io- Cloud platforms: Github, Heroku, Google App Engine, Red Hat OpenShift- Virtualisation: BlueStacks, Emscripten, QEMU, VMWare Fusion, ESXi- Data recovery: bzip2recover, ddrescue, DiskWarrior, Prosoft Data Rescue- Network monitoring: Icinga, Pandora- Network hardware: Cisco, Fortinet, Juniper, HP ProCurve

Work Experience

Infofab, OSE

Project Engineer / August 2014 – Present



3 years at InfoFab (spinoff), transferred to OSE (parent company) with boss in 2018. Wrote driver software to control microSD card testing equipment (PPLU800, AF8652, TBPP12000), monitoring software to parse log files and send results to a SQL database, and a USB keyboard & mouse logger using a Raspberry Pi. Configured network monitoring dashboards with Icinga and Pandora, Asterisk PBX systems and IT support for a client in Taipei, and evaluated Advanced Planning tools (Just Plan It, PlanetTogether, Netronic) to improve scheduling in a memory chip factory. Took online training courses in big data processing with ElasticSearch and Tensorflow machine learning.

My key achievements were:

- Migration of proprietary C# device software to Node.
- Reverse-engineered closed-source DLLs to help colleagues debug APIs.
- Persuaded the chairman to upgrade the office network to fiber.
- Wrote a log file parser and SQL client without .NET to run on Win2000 equipment.
- Robotic arm control with Universal Robots.

Side projects at the time included:

Pingtype: Chinese/English language exchange tool including glyph keyboard, word spacing, Pinyin Romanisation, literal translations, and parallel text. Gathered data from the Bible, 20k restaurant menus, 2M song lyrics, TED talks, movie subtitles, and comics. Discussed adding 4 new characters to Unicode with the Consortium IRG. Manually made 5025 dictionary edits to improve translations instead of Google Translate. I can now type a few characters, search the lyrics, and sing along in church.

<http://pingtype.github.io>

Hardware repair for friends. Bose headphones, MacBook Air 6,2 (x2), MacBook Pro 11,3, iPhone 5, 4S, 3GS, iPod Nano 6G and 1G, iPod 6G and 5.5G with iFlash. Data recovery and jailbreaking when needed.

Taiwan Foreign Residents: Back-end data processing for a friend, featured on the news.

<https://www.taiwannews.com.tw/en/news/3400148>

Sortlikes: Scraped and analysing Facebook Likes data to discover the most popular comics/TV shows/movies/bands among my Taiwanese friends for use in Pingtype.

<https://github.com/peterburk/sortlikes>

Set list data. Parsed SQLite from OnSong app, church notice sheets, and PPT files, cross-matched dates with YouTube recordings to get MP3s using Fission and Audacity. Drew graphs of most common songs in Chinese and Taiwanese.

Chord Progressions: Scraped chords in existing songs, wrote transposing script for Roman Numeral analysis, and bulk-generated MIDI files with all possible tunes.

<https://peterburk.github.io/chordProgressions/index.html>

Public transport. TRA Map: rewrote Logo in JavaScript to draw a time-proportional subway style map of the Taiwanese train network, and timetable app. Created KML files of bus routes using only real-time location data. Scraped data and graphed city bike availability over times of day to find out whether to wait or walk to the next docking station.

Coded my own browser-based offline maps, calendar, notes, and expenses tracking apps. Built magnetic audio jack, MagSafe-based voltmeter, motion sensor logging with XBee, and Windows kernel-mode debugging serial connector.

Essmart

Product associate / March-August 2014



<http://essmart-global.com>

Six month contract for social enterprise supplying solar lights, water filters, and cook stoves to rural villages. Found and tested new products, trained sales staff at company retreat, and coded Android check-in app with consideration for unreliable network access.

My key achievements were:

- Trained staff in basic electrical principles using phone chargers and LEDs.
- Gathered user feedback and photos for use in the monthly catalogue.
- Android app for sales staff to record product deliveries.

Side projects at the time included: MOBAC map profiles for every country, hierarchical data viewer in PHP, iTunes mini player, fondant (image to HTML using JavaScript steganography), iOS contacts app, multi-voltage power supply from 12V-5V car charger.



AnswerTo

Forum administrator / February-March 2014

<http://answer.to>

Converted StackOverflow database from XML to JSON, separated only answered questions, and wrote new questions to start a premium QA site. This began with a side project of mine (offline StackOverflow with compressed data). Alan Gunshor from AnswerTo then asked me to parse his data, and paid me enough to buy my plane ticket out of India.

Egoman Technology Corp.

Intern / April-August 2013

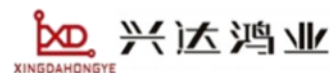
EGOMAN

<http://egoman.com.cn>

Four month contract for Raspberry Pi manufacturer. Built a database of project tutorials, completed projects, and ideas. Practically demonstrated some projects including battery power, CPLD programming, and software-defined radio. Also made a database of every department of every university in Greater China to assist marketing teams. This was the result of my PiPod side project, where I fit an Raspberry Pi into an iPod shell.

Xingda Hongye PCB Co. Ltd.

Intern / March-April 2013



<http://xingdahongye.com>

One month unpaid internship for PCB manufacturer in Zhongshan, China. Assisted with Gerber design files and English translations of marketing materials. Lived in factory dormitory with other workers, and learned about the entire production line from their perspective. My main side project was a basic IDE for bash scripts, written in PHP.

ETM Siemens GmbH.
Summer university / August 2012



One month contract for professional control system company. Trained in using the WinCC OA SCADA software used by CERN, the Gotthard base tunnel, and power stations. Designed panels to modify value archives using Control scripts (a proprietary programming language). Documented the software with a 13-page user manual, and received a prize acknowledging the quality of work. My main side project was an email-based web proxy, available through browse@siplinkserver.appspotmail.com, to which I later added image upload, image to Base64, and translate functions.

Centre for North Korean Defectors
Intern / May-June 2012



Two months with North Korean refugees in Daegu, South Korea. Fixed desktop PCs and phones, taught people how to use the Internet, edited the centre's website, was a substitute English teacher, and helped with many cultural trips and social activities. My main side project was parsing OpenStreetMap data for offline POI searching.

Fisher & Paykel Healthcare
Intern – Sleep algorithms research / November 2011-March 2012



Three month contract for healthcare manufacturer. Ported device interface software to C for use on Mac and Linux (the driver was being used on a Mac Mini at the time, and is now used on the Raspberry Pi). Expanded features of Windows driver using C# on Visual Studio 2010, including OSC protocol, and UDP output. Developed iPhone and web apps to edit Plist settings and display real-time streaming data. Integrated controller with Pertecs analogue computer, and developed a graphical schematic design tool. Learned basic OpenGL for graphing values in real time using Mark Titchener's SpOd. Wrote thorough documentation about the control system protocol. My main side project was YouLing, a mouse-over text translator that was on the Mac App Store, which had 611 downloads and one \$25 donation.

My key achievements were:

- Wrote a USB driver in C for an artificial lung, which is still in use as of 2017.
- Integrated new features into the C# driver on Windows.
- Developing my first web app using PHP.
- A positive experience of teamwork in an English-speaking corporate environment.

I went to New Zealand on a Working Holiday visa, and joined the Fisher & Paykel summer internship scheme. My impression was very positive, and I've been back to visit twice since. I left in order to visit more countries before settling down for a career. Now I've stayed in Taiwan in order to get 3 years of continuous relevant work experience as required by the Skilled Migrant Category visa.

Lululemon

Network operator / October-November 2011



<http://www.lululemon.com>

One month contract for yoga clothing manufacturer, testing the installation of new network equipment from company headquarters. Changed DNS and gateway settings, ran ping, VNC, and SSH tests, and guided on-site technicians through troubleshooting procedure.

pixelgarde

Pixelgarde, Inc.

Mac OS developer / June-September 2011

<http://www.pixelgarde.com>

Two contracts (4 weeks and 6 weeks) for desktop software developer. Re-developed Pixelgarde application for Mac without access to original source code. Gained skills in Cocoa programming using Xcode 4, and interfacing with sharing APIs. The software allows a user to edit a photo, trim hidden EXIF metadata, and share it using Facebook, Twitter, Photobucket, Flickr, Picasa, and email.



Wildmind Corp.

Intern – Product Deployment / July-September 2010

<http://www.wildmindcorp.com>

Summer contract for mobile app developer. Used shell scripts to gather TV guide data for new product markets, allowing international release. Found beta testers for FanWave in UK and US, and created social marketing data retrieval tools. Wrote thorough documentation for all projects.



HealthDiplomats

Intern – Association management and database / June-August 2009

<http://www.healthdiplomats.com>

Two-month contract for a healthcare consultancy including database management of contacts and documents, proofreading, assistance at the ECOSOC convention, life skills training, and a project proposal for an SMS-based pandemic tracking system.

Axiotron Corp.

Technical support associate / July-September 2008

AXIOTRON

<http://www.modbook.com>

Summer work for Modbook (tablet Mac) manufacturer including hardware reverse engineering, user tutorial documentation, software evaluation, product brainstorming, forum moderation, Cocoa and AppleScript software creation.

Education

Started Ph.D. at KAIST in South Korea in 2013; left after 6 months due to a lack of funding.

ETS GRE

Vancouver, Canada / 2011-09-19



<https://www.ets.org/gre>

Section	Scaled Score	% Below
Verbal Reasoning	162	89
Quantitative Reasoning	163	88
Analytical Writing	5.0	92

MEng (First-class Honours) Electronic Systems Engineering

Lancaster University / 2007-2011

IET Prize for Outstanding Academic Achievement.



<http://www.lancaster.ac.uk>

EAP Exchange Programme, Computer Engineering

UC Santa Barbara / 2008-2009



<http://eap.ucsb.edu>

Course	Weight	Year	Title	Grade	Exam	Other	Overall
INT.201	0.50	08/09	Study Abroad Half Unit 1	I			96
INT.202	0.50	08/09	Study Abroad Half Unit 2	I			90
INT.203	0.50	08/09	Study Abroad Half Unit 3	I			82
INT.204	0.50	08/09	Study Abroad Half Unit 4	I			80
INT.205	0.50	08/09	Study Abroad Half Unit 5	Ili			65
INT.206	0.50	08/09	Study Abroad Half Unit 6	Ili			65
ENGR300	1.50	09/10	Final Year Project	I		73	73
ENGR311	0.50	09/10	Engineering Management	Ili	56	83	67
ENGR312	0.50	09/10	Electrical and Fluid Drives and Actuators	I	78	75	78
ENGR331	0.50	09/10	Digital Systems	I	82		82
ENGR332	0.50	09/10	Integrated Circuit Engineering	I	90		90
ENGR333	0.50	09/10	Analogue Electronics	Ilii	56		56
ENGR334	0.50	09/10	Programmable Systems	I	96	95	96
ENGR335	0.50	09/10	Wireless Systems	I	80		80
D.CS422	0.50	10/11	Advanced Communication Techniques for 3G systems	Ili	62		62
ENGR402	0.50	10/11	Advanced Embedded Systems	I	75	81	76
ENGR405	0.50	10/11	Interfacing and Integration	Ili	68	68	68
ENGR406	0.50	10/11	Intelligent System Control	I	87	93	88
ENGR407	3.00	10/11	Group Project	Ili		65	65
ENGR410	0.50	10/11	Integrated systems design	I	90	68	86
ENGR445	0.50	10/11	Leadership in Technology	Ili		67	67

International Baccalaureate Diploma

International School of Geneva / 2005-2007

39 points. HL Computer Science, Physics, Mathematics.

SL Economics, English, French.



<http://www.ecolint.ch>

Volunteer Experience



CouchSurfing Meetup co-host
Kaohsiung, Taiwan / August 2016-present

<http://www.couchsurfing.com/people/peterburk>

Host a weekly meetup of approximately 40 people, both Taiwanese and foreigners, with 2 other co-hosts. Regularly update event information on the CouchSurfing website and Facebook group, welcome newcomers, and mediate any disputes within the community.



Friends International

<http://friendsinternational.uk>

Reach volunteer: *Lancaster, UK / September-December 2012*

Edinburgh International Outreach: *Edinburgh, UK / July 2011, July 2012*

International Café team member: *Lancaster, UK / 2010-2012*

Organised and led cultural evenings for international students hosted by a Christian group of volunteers from 10 local churches.



Lancaster Award

Lancaster, UK / June 2011

<http://www.lancaster.ac.uk/careers/students/the-lancaster-award>

Certificate of extra-curricular involvement. Skills assessed:

Communication, Interpersonal skills, Customer/client-focused, Decision making, Enterprising, Commercial awareness, Leadership, Planning, Teamwork, Networking, Problem solving and analytical skills, Computer literacy, Cultural sensitivity, Flexibility, Numeracy, Self awareness.

Interests

Christian: KHOP Prayer room, KGCC youth group (Chinese), Zion Church (Chinese), KIC Church (English), visiting children in the hospital with KTL.

Activism: Speak Society president, 2010-2011, raising awareness of social justice issues (FairTrade, COP15). Film screenings about North Korean refugees for LiNK charity (UCSB 2009, Lancaster 2010, Vancouver 2011). Service projects with Youth For Christ (Romania 2004, Poland 2005, 2006) and school (Tanzania 2006).

Entrepreneurship: Buying, refurbishing and reselling a class set of iBooks in 2005; iPod repair at school; LUSARS Apple repair, Lancaster Leaflets flyer blog.

Outdoor activities: Cycling, hiking, swimming, skiing, paragliding.

Web forums: iPodLinux forum moderator in 2005, then Axiotron and AnswerTo, currently actively sharing side projects on Hacker News (software) and Hackaday (hardware).