Alexander James Holyoake

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Relevant Experience

2014 – 2016	**Race Strategist at Mercedes F1 Team** Data science; developer; replace spreadsheets with rigorous inference and automated Python system; .NET library development for data structuring; web UI development for easy deployment; rapid, high-pressure decision making; .NET Monte Carlo simulation	
2012 – 2014	**Performance Analyst at Caterham F1** Data science; Lead developer in small group for Python and Matlab tools with web interfaces for post-session analysis	
2007 – 2011	**Experimental Ph.D. in Applied Mathematics** Data analysis; Windows, Bash, Matlab, C++, C experience to automate data collection; PIV; first-authored paper; public speaking; reverse engineering serial protocol for instrumention; hardware development for data acquisition	
2009 – 2011	**Formula Student** Worked with a large team in very high-pressure environment; website development; team management and leadership; sponsor liaison; constructed large proportion of the car; parametric simulation with Bash interface to Python optimization routines	
2005 – 2010	**Gentoo** Used as main system including all packages compiled from source, kernel maintenance etc. (for fun)	

Education

2013 – 2015	**Various Machine Learning Courses** Coursera, Cambridge Coding Academy workshop, Cranfield Operational Research	
2007 – 2011	**Ph.D. in Granular Dynamics** Department of Applied Mathematics and Theoretical Physics & Trinity College, University of Cambridge	
2006 – 2007	**Master's Degree in Mathematics** Trinity College, Cambridge	
2005 – 2007	**Certificate and Diploma in Modern Greek** Trinity College, Cambridge; scholarship	
2003 – 2006	**First Class B.A. (Hons) in Mathematics** Trinity College, Cambridge; scholarship for exceptional performance; Heilbronn Prize	
2002 – 2003	**Sixth Term Examination Papers** 2 and 3 (Grade S - outstanding)	
2001 – 2003	**6 A levels and 1 AS level** all grade A	
1996 – 2001	**14 GCSEs** 11 A* including English and German	

Communication

2014 – 2016	**Race Strategy Briefings** Lead briefing to team owners, drivers and Mercedes board thoughout race weekend	
2015 – 2016	**Co-supervision of Master's projects** Collaboration with universities to improve data science at Mercedes	
2012 – 2016	**Software Liaison** Finding solutions between strategy developers, IT & infrastructure, software group and third-party software providers	
2012	**Workplace Coffee** Intranet site to centralize coffee ordering and encourage isolated departments to interact	
2010 – 2011	**Mathematicians' Coffee** Raised money to organise space for informal discussions in Maths department as inter-group communication was very poor	
2008 – 2011	**Supervisor for Undergraduate Mathematics** Three special commendations for quality of teaching from leader of programme based on student feedback	
2008	**Inner City Sixth Form Maths Mentoring** Helped GCSE resit students	

Technology

Python	Expert; systems programming, machine learning, extensive data analysis
Matlab + MEX (C Extensions)	Expert; data processing, image processing, calibration routines and non-linear PDE solver (finite volume and spectral)
HTML, CSS, Javascript	Proficient; experience with Express, templating engines, REST interfaces
C{,++} (Linux and Windows)	Proficient; data acquisition and inner-loop Matlab routines
SQL	Proficicent; MS-SQL, Postgres, MySQL, SQLLite
.NET	Expert; core track data processing library, implementations of mathematical algorithms for use in other components
Java	Beginner; basic Android development, Computational Fluid Dynamics post-processing routines
Go	Beginner; hobby projects to play with concurrency features
Office Suite & VBA	Proficient
BASH	Proficient
LaTeX	Proficient
Operating systems	Excellent knowledge of using and administrating Linux systems (Gentoo and Ubuntu) and Windows; also proficient with OSX (genuine and hackintosh)

Public Projects

Embedded GPS Logger github.com/ajholyoake/adaloggergps	Embedded C project to log GPS data on a Pi Zero to an SD card to study velocity, acceleration and altitude data for a dirt bike expedition
Intranet Coffee Store github.com/ajholyoake/coffee	Node.js, Express, HTML, IIS bootstrap project to centralize coffee ordering and to compile metrics
Online GPS Tracker github.com/ajholyoake/spot_tracker	Python (Flask), Javascript, HTML page to update family and friends of location via a satellite tracker
Graph Theory Animation github.com/ajholyoake/percolator	Javascript, HTML single page for illustrating the concept of percolation in graph theory
Home Automation	Developing software to Raspberry Pi and The Next Chip for lighting, audio and data logging while homebrewing

Other Skills and Interests

Physical Hacking	Complete renovation and construction of a house; welding; car maintenance; barbeque design and manufacture; growing vegetables; homebrewing
Languages	Greek (degree level), German (intermediate), Spanish (intermediate)
Driving	Full driving licence (inc. motorcycles)