Alexander James Holyoake

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Date of Birth: 07/08/1985
Nationality: British

Technical Experience

2012-	**Performance Analyst at Caterham F1** Vehicle Dynamic and Aerodynamic analysis of car performance. Heavy emphasis on coding new, reusable tools in MATLAB and Python with web-based interfaces
2009-2011	**Group Leader for Full Blue Racing** (Cambridge University Formula Student team): designed the intake for the 2010 and 2011 cars, assisted with chassis design, coordinated large portions of the construction, acted as sponsor liason and designed the team's website (www.fullblueracing.co.uk)
2004-2005	**E.J. Holyoake Commercial Body Builder**, Shrewsbury: restoring classic vehicles and repairing commercial and industrial vehicles
2000	**Computer technician** at Regency Computers, Shrewsbury: Saturday job building and fixing computers

Education

2007-2011	**Ph.D. in Granular Dynamics**, Department of Applied Mathematics and Theoretical Physics & Trinity College, University of Cambridge
2006-2007	**Masters Degree in Mathematics**, Trinity College, UoC
2005-2007	**Certificate and Diploma in Modern Greek** (Degree Level), Trinity College, UoC
2003-2006	**First Class B.A. (Hons) in Mathematics** Trinity College, UoC
June 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

Major Awards and Prizes

2007-2010	**Research council (NERC) studentship** for duration of Ph.D. to cover university fees, lab costs, field work, conference costs and £13,000 maintenance grant per year. Extra 6 months awarded for promising research
2006,2007	**Language Bursary** worth £1600 p.a. to study Modern Greek in Greece
2006	**Trinity College Senior Scholarship** For first class degree
June 2006	**Heilbronn Prize** for outstanding final year result
2004	**Trinity College Junior Scholarship** For first class degree in first year

Research Record

2007-2011	**Ph.D.:** *"Rapid Granular Flows in an Inclined Chute"* Investigating accelerating chute flows; conducted experiments collecting data with bespoke software (C, MATLAB); filtered, processed and analysed data, and compared with solutions produced from a custom non-linear PDE solver
2011-2012	**First-authored paper** with title "High-speed granular flows" in the Journal of Fluid Mechanics (Journal of Fluid Mechanics)
March 2009	**Conducted 3-week fieldwork** at Swiss Avalanche Institute studying snow avalanches
2008,2009	**Presented work at leading international conference** in field (Gordon Granular Conference, Maine, US)
2007-2009	**Gave several presentations** in Cambridge in various talk series

Positions of responsibility

2012-	**Performance Analysis** Technical / Implementation lead of a small group of analysts developing reusable tools with innovative user interfaces. Mathworks liaison providing basic training to other employees
2012-	**Staff Coffee** Implemented company wide site to order coffee centrally for a discount. Managed deliveries etc.
2012	**Property Development** sole project manager and instigator of a small residential development project on a brown field site
2011	**Mathematicians' Coffee** raised money, organised academic book collection and encouraged attendance to promote communication within the department
2009-2010	**Organised a series of weekly talks** for the G.K. Batchelor fluids lab, Department of Applied Mathematics and Theoretical Physics, University of Cambridge

Teaching & Communication

2007-2011	**Supervisor in Mathematics**: taught small groups of Cambridge undergraduate students; more than 170 hours of teaching of several degree level courses, ranging from introductory first year subjects to advanced final year topics
2007-2011	**Coursework Demonstrator** programme: assisted Cambridge Mathematics undergraduate students with programming in Matlab and C
2008	**Mentored inner city Sixth Form Students** during Cambridge Summer School programme
2005	**Teaching assistant** for GCSE Resit Class at Hills' Road Sixth Form College

Computing

Matlab + MEX (C Extensions)	Expert; data processing, calibration routines and non-linear PDE solver (finite volume and spectral)
HTML, CSS, PHP, Javascript (Client and server side)	Proficient
C / C++ (Linux and Windows frameworks)	Proficient; data acquisition and time critical Matlab routines
Mathematical .NET	Intermediate; implementations of mathematical algorithms for use in other components
Python	Proficient
Office Suite & VBA	Proficient
BASH	Proficient
LaTeX	Proficient
Solidworks CAD	Proficient; air intake design for Formula Student
Digiflow (experiment analysis)	Proficient; Particle Image Velocimetry routines and data acquisition
Operating systems	Excellent knowledge of using and administrating Linux systems (Gentoo and Ubuntu) and Windows; also proficient with OSX and cursory knowledge of XCode

Other Skills and Interests

Languages	Greek (degree level), German (intermediate), French (intermediate)
Driving	Full clean driving licence
Sport	Running, cycling, skiing, darts and watching Formula 1, learning to sail, go-karting, kit car track days
Music	Playing the piano, guitar and French horn
Other	Restoring bikes and cars, barbeque construction, home brewing