Alexander James Holyoake

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Technical Experience

2014-2016	**Race Strategist at Mercedes AMG F1** Development of strategy software (simulation, analysis and real time tools), pre-race forecasting, in-race strategy, post-race analysis. Heavy emphasis on automating and adding rigour and consistency to the group's practices
2012-2014	**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)

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	**Masters Degree in Mathematics**, Trinity College, Cambridge
2005-2007	**Certificate and Diploma in Modern Greek**, Trinity College, Cambridge
2003-2006	**First Class B.A. (Hons) in Mathematics** Trinity College, Cambridge
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

2014-2016	**Co-supervision of master's projects** 6 projects supervised in conjunction with leading universities to further data processing capabilities at Mercedes AMG F1
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** "High-speed granular flows" in the Journal of Fluid Mechanics
March 2009	**Conducted 3-week fieldwork** at SLF (Swiss Avalanche Institute) studying snow avalanches

Positions of responsibility

2014-2016	**Race Strategy** Responsible for individual cars' strategy over the weekend. Developmental lead in strategy group.
2012-2014	**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
2012-2014	**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

Teaching & Communication

2014-2016	**Race Strategy** Lead briefing to team owners, drivers and Mercedes board through race weekend
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. 3 special commendations for quality of teaching
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

Computing

Python	Expert, systems programming, machine learning, extensive data analysis
Matlab + MEX (C Extensions)	Expert; data processing, calibration routines and nonlinear PDE solver (finite volume and spectral)
HTML, CSS, Javascript	Proficient
C / C++ (Linux and Windows)	Proficient; data acquisition and time critical Matlab routines
.NET	Expert; Core track data processing library, implementations of mathematical algorithms for use in other components
Office Suite & VBA	Proficient
BASH	Proficient
LaTeX	Proficient
Solidworks CAD	Proficient; air intake design for Formula Student
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), Spanish (intermediate)
Driving	Full driving licence (inc. motorcycles)
Other	Restoring bikes and houses, barbeque construction, home brewing