



The University of Edinburgh
Careers Service

What *else* can you do with a PhD in Mathematics?

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The problems / challenges.....

- What *can't* you do.....Advertising!!??
- Finding figures
 - in published data, all postgrads together
 - international destinations not required
 - cost



Some stats (for what they're worth): graduates with doctorates in Mathematical Sciences, 2007 (HESA)

FT paid work only (inc self-emp)	125 (64.1%)
PT paid work only	10 (5.1%)
Vol / unpaid work only	5 (2.5%)
Work + further study	30 (15.1%)
Further study only	15 (7.7%)
Assumed to be unemployed	5 (2.6%)
Not available for employment	5 (2.6%)
TOTAL	195

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Where does a PhD fit in?

What am I?

- A new graduate?
- A new graduate – but different?
- A potential ‘experienced hire’, changing jobs and moving on?
- A job-changer, changing direction?



As a 'new graduate'?

Q: What is available?

A: Everything that's available to a first degree graduate, in:

- finance and commerce
- management in industry, logistics / transport / distribution, retailing, etc, etc
- professional services
- education
- public sector administration



As a new graduate – but different?

- Organisations with a special ‘entry slot’, eg some management consultancies
- ‘Blue-chip’ / high profile companies, eg oil companies
- Research-based organisations (including contract research companies) in pharmaceuticals, defence, medicine, aerospace or alternative energy
- The Bank of England



As a new graduate – but different? (2)

- Civil Service: research-based departments, eg Social Research or Science/Engineering-based such as DSTL or DESG – or Stats-based such as The Office for National Statistics or (part of) The Scottish Government
- The Security Services including GCHQ
- Think-tanks and pressure groups



As a new graduate – but different (3)

- “Academic” environments such as The Intellectual Property Office, The European Patent Office or the Meteorological Office
- Mathematical modelling consultancies
- The financial sector – Stock-Broking or Analyst roles in Merchant Banking
- Insurance, eg Risk Management roles



Innovative Technology Ltd

Job Title

Mathematician

Job description

Innovative Technology has been supplying bank note validators to the international gaming industry since 1993 and is currently top of the European market. Their track record in research, development and cutting edge innovation is substantiated by their unique SPF core technology with over 2 million validators currently in the field. Your brief will be to support the design and development of new products and upgrades to their existing products. Reporting to the Technical Manager, this role joins their Research team consisting of a further Mathematician, Materials Scientist and Physicist. Main functions and responsibilities:

- Development of classification algorithms for validation of products
- Development of efficient training algorithms for classification
- Modelling of sensing systems to predict performance
- Modelling of control systems
- Liaise with the multi-disciplined development team

Degree

Mathematics & second degree in a related subject e.g. Applied Numerical Computing; Applied Mathematics; Statistics

Location

Oldham, Manchester

MVA Consultancy Ltd

Job Title Graduate Analyst/Researcher (Transport Consultancy)

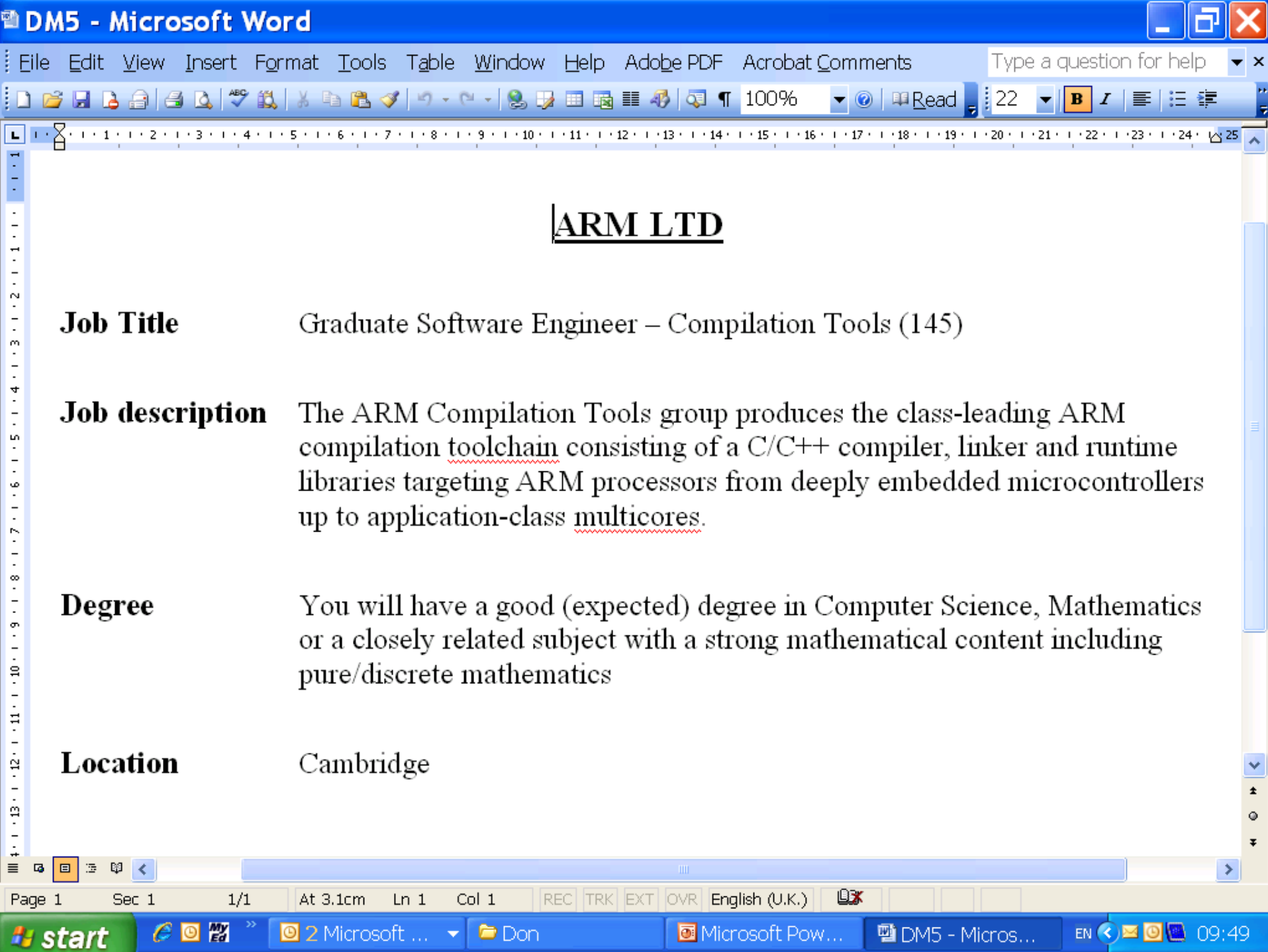
Job description The company's clients and projects are highly varied in their objectives, technical content, scale and duration. You may find yourself contributing to a major piece of policy research for a central government department, a transport assessment in connection with a private residential or commercial developer, development of a transport strategy for a city or region, or a bid for a railway or toll road franchise, or for a new tram system.

Degree Ideally you will be anticipating a minimum 2:1 or 2:2 first degree or you may have completed your first degree and be studying for a masters or PhD in a relevant subject – Transport Planning, Traffic Engineering, Civil Engineering, Transport Management, Urban and Regional Planning, Geography, Operational Research, Economics, Statistics, Environmental Science, Mathematics, Numerate Sciences, GIS, Social Research, Social Sciences, Psychology, Sociology, Business Studies

Location All UK

GCHQ

Job Title	Communications Research and Development Graduates and Lead Researcher Roles
Job description	<p>GCHQ is a critical part of the UK's intelligence and security service, working with MI5 and MI6 to counter threats to Britain. Home to one of Europe's most powerful IT estates, they are a technologically driven organisation with some 1500 people working in a variety of teams within a major IT function. The type of work might include:</p> <ul style="list-style-type: none">• Data Mining• Hardware• High-Speed Internet Processing• Natural Language Processing• Network Exploration• Mobile Technology• Special Research Projects
Degree	You are expected to have, or be studying towards, a minimum 2:1 honours degree in a single or joint subject such as Applied Mathematics, Physics, Electronic Engineering, Computer Science or any other numerate/technical subject
Location	Cheltenham, Gloucestershire



ARM LTD

Job Title Graduate Software Engineer – Compilation Tools (145)

Job description The ARM Compilation Tools group produces the class-leading ARM compilation toolchain consisting of a C/C++ compiler, linker and runtime libraries targeting ARM processors from deeply embedded microcontrollers up to application-class multicores.

Degree You will have a good (expected) degree in Computer Science, Mathematics or a closely related subject with a strong mathematical content including pure/discrete mathematics

Location Cambridge

Standard Chartered Bank

Job Title	Graduate Solution Development – Financial Markets (Singapore)
Job description	Financial Markets in Standard Chartered supports the trading, sales and risk management of both simple and complex products for corporate, institutional and retail customers. You will embark on an exciting career path as a junior developer, exploring and experiencing different facets of the businesses we support.
Degree	You will have IT/Science/Engineering/Economics/Mathematics background with grade points First Class Honours or Second Upper (2:1)
Location	Singapore

As an 'experienced hire'

What 'experience' (direct / relevant) do you have?

- Research
- Writing
- Tutoring groups
- Lecturing?
- Supervising projects?
- Event organising?



As a job changer, changing direction

- Most will continue with a Career in Maths, either:
 - with Maths as the main-stay – modelling, risk analysis, or
 - where Maths is a useful tool or foundation – GCHQ, transportation consultancy
- **BUT YOU DON'T *HAVE* TO STICK WITH IT!**
 - direct entry to unrelated fields (large companies)
 - 'one-offs' with smaller organisations
 - ['stepping-stones' approach]
 - postgraduate conversion courses; total change or to specialise



Elements in career decision-making

- Self-awareness
- Opportunity awareness
- Decision making
- Transition skills



Transferable skills

- **Researching / interpreting and evaluating data**
 - **Logical thinking**
 - **Attention to detail**
 - **Team-working / working autonomously**
 - **Working under pressure / meeting deadlines**
 - **Project management**
 - **IT skills**
 - **Proposing opinions / discussing ideas**
 - **Flexibility**
 - **Networking**
- AND MANY MORE**



Help available from careers services

- **Careers Information**
- **Careers Education**
- **Advice and Guidance**
- **Job hunting**
- **Website**



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Useful resources

- www.mathscareers.org.uk
- www.plus.maths.org/interview.html
- www.ima.org.uk
- www.phdjobs.com
- www.math-jobs.com
- www.jobs.guardian.co.uk
- www.careers.ed.ac.uk/SAGE
- www.prospects.ac.uk

- Professional journals



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.....and finally

- **Recruitment *IS* still happening**
- **The salary issue**
- **Questions?**

