

Dr Lee Howells

PROFESSIONAL EXPERIENCE

- April '04 – Present
- Consultant**
Consult Hyperion **Guildford**
Recent projects have included:
- VISA (CEMEA Region)**
- ❑ **Co-author of the strategy** describing how to migrate smart-card technologies to the Middle East.
 - ❑ **Co-author of the strategy** defining VISA's view on combining **Government** smart-card applications with traditional payment applications.
- Department for Transport (DfT)**
- ❑ **Co-author of a Structured Risk Analysis** for the DfT that analysed the use of contactless smart-cards for use in an e-money scheme.
 - ❑ **Research and analysis** enabling the identification of **cost-effective** measures to **mitigate identified risks**.
- United Kingdom Passport Office (UKPS)**
- ❑ **Security cleared for Public Sector contracts**
 - ❑ Performed the **strategy** derivation, **determining the policy** on adoption of biometrics in the **British Passport**.
- Police Information Technology Office (PITO)**
- ❑ **Co-author** of the document that **developed PITO's strategic vision** for how identification and **biometric technology** will be used to provide the Police Service with **real operational benefit** over the next 15 years to 2020.
- American Express (AMEX)**
- ❑ **Authored** the Hardware Security Module (HSM) specification, a document that describes the functionality enabling the processing of **millions of dollars** worth of credit-card transactions **securely each day**.
 - ❑ **Led the Development** of a suite of **mathematical tests** to ensure that debit/credit-card data transfer methods are secure.
 - ❑ **Developed tests** to certify **next generation 'contactless'** debit/credit-card payment terminals.
 - ❑ **Led analysis** meetings with clients, explaining test results and developing methods to overcome any problems.
- MasterCard**
- ❑ Research and analysis to enabling MasterCard to understand the **business opportunities, financial agreements** and operation of mobile top-up mechanisms in selected EU and CE countries.
 - ❑ **Co-author** of a report detailing the financial aspects of pre-pay top-up, **describing the infrastructure** of key importance to MasterCard.
- Jan '04 – April '04
4 Month Contract
- Consultant**
The Princes Trust **London**
Responsibilities included:
- ❑ **Bid for and won, in a competitive selection competition**, the contract to act as an independent IT consultant to the Prince's Trust.
 - ❑ **Designed a secure database** application for holding sensitive details relating to a new Prince's Trust young persons' community based project.
 - ❑ Acted as both independent consultant advising on the database design and was also **awarded the project of developing the application**.
 - ❑ Ongoing **meetings with the client** to discuss the problem and suggest resolutions.

Mar '03 –
April '04

Time Series Methodologist
Office of National Statistics

London

- ❑ **Research** into, and the use of, **Auto Regressive Integrated Moving Average (ARIMA)** models, temporal dis-aggregation and benchmarking to **improve the analysis** of time series data.
- ❑ **Represented** the Time Series Department at board meetings, attended by **Senior Civil Servants, to negotiate time, funds** and report on current progress.
- ❑ **Seconded** to a multi-departmental, **cross-functional team**, charged with replacing existing legacy systems.
 - **Led the Time Series department meetings** to discuss requirements of the new system.
 - Redesigned the Time Series system, using UML, **liaising between business areas, programmers and IT consultants**, to create automated solutions.
- ❑ Placed on the list of "**Authorised Consultants**", which allows the **Civil Service to request my services in the future** without the need for Government approval.

Oct '02 –
Mar '03
6 Month
Contract

Software Developer
Box UK Ltd

Cardiff

- ❑ Redeveloped algorithms to be **computationally efficient**.
- ❑ **Solely responsible** for setting up secure company and client Internet email system, using **PHP and Apache web server**.
- ❑ Coding 'Content Management Systems' in XML technologies and PHP, to enable clients to build dynamic, database driven web sites.
- ❑ **Solely responsible** for the coding and construction of 'Text only' and 'print' versions of web sites using **XML technologies** whilst **corresponding to W3C guidelines**.

EDUCATION

Awarded five fully government funded PhD scholarships, at five different Universities on the strength of Masters dissertation.

Chosen to present Doctoral research work at the Houses of Parliament as part of the 'Young Scientist of the Year' award.

1998 – 2002

PhD Astrophysics
Astrophysics Research Institute

Liverpool

Doctoral Thesis Title:

The Design and Implementation of an Automated Data Analysis System for Robotic Telescopes and its Application to Be Stars.

This involved:

- ❑ My **Doctoral research allows 9 months manual work to be completed, autonomously, in 4 hours.**
- ❑ **Calculation and analysis** of parametric and non-parametric **correlation statistics**.
- ❑ **Error analysis of correlated and non-correlated data**, using computed variance and co-variances.
- ❑ Pattern-matching image-maps to numerical data using '**simplex**'.
- ❑ Development of computationally efficient algorithms allowing the extraction of maximum information from data, whilst operating in real time.
- ❑ Created a software engine, written in C for control software and FORTRAN 95 for **computationally intensive procedures**, to autonomously **extract relevant numerical data** from time series image data.

1994 – 1998

Master of Physics in Astrophysics, 2.1
Cardiff University

Cardiff

Masters Thesis Title:

Modelling Radiation Transport in Circumstellar Discs.

This involved:

- ❑ Modelling random processes using **Monte-Carlo** simulations, to produce 360° output matrices.
- ❑ **Statistical analysis** of numerical datasets in excess of 10 million datum.

1988 – 1994

Blaengwawr School

Mid-Glamorgan

- ❑ **A' level:** Electronics, Applied Mathematics, Physics.
- ❑ **GCSE:** Double-Science, Technology, Information Technology, French, History, Mathematics, English.

Personal Interests

- ❑ Foreign Travel.
 - Travelling as often as funds and schedule allows.
- ❑ Snow Boarding and Skiing.
 - **Completed** the **Downhill Olympic** run at Tignes.
- ❑ **Rock Climbing**
- ❑ **Qualified** Scuba Diver.
- ❑ **Qualified** karate instructor
 - Competitor in **National Karate Championships**.
 - Competitor in **Welsh National Karate Championships**.
- ❑ Hiked around Europe – expanding communication and language skills.
- ❑ Author of Several websites, including **www.LeeHowells.com**.
- ❑ **Elected** as fourth year representative for astrophysics degree.
 - **Responsible** for **negotiating** the completion date of dissertations until after the examination period instead of during the examination period.
 - **Responsible** for liaising with lecturers about both the structure and general student feeling.
- ❑ **Elected** as treasurer for Physics and Astronomy society.
 - Responsible for organising weekly meetings.
 - **Responsible** for a £4000 annual budget.
 - **Elected unanimously** by the committee.
- ❑ Year representative for Physics and Astronomy society.
 - **Elected** by **120** third year students.