

Stephen Christopher Phillips

Date of Birth 1974

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Employment

- 2004– *The University of Southampton, IT Innovation Centre*
Research Engineer.
Supporting GRID middleware deployment and development.
- 2001–2004 *The University of Southampton, Department of Chemistry*
Postdoctoral Research Fellow, supported by Celltech.
Developing a new molecular mechanics package using modern software engineering techniques.
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Education

- 1997–2001 *The University of Southampton*
PhD in Chemical Physics with industrial CASE award from SmithKline Beecham.
My project, “The Computer Simulation of Conformational Change in Biological Molecules” used my computing, mathematical and chemistry skills, including algorithm design, programming and data analysis.
Won **second prize** presenting my work as a lecture at the 1999 MGMS Young Modellers’ Forum. Won **first prize** in the departmental research poster competition.
- 1993–97 *The University of Southampton*
Double honours Chemistry and Mathematics BSc.
Achieved **first class** honours in Chemistry and **first class** honours in Mathematics.
Awarded an **IMA prize**, given to the two best students in the final year of a Mathematics degree.
- 1991–93 *Bilborough Sixth Form College, Nottingham*
A levels: A in Chemistry, Mathematics, Further Mathematics and Physics.
S level: Merit in Mathematics
- 1986–91 *Alderman White Comprehensive School, Nottingham*
GCSEs: A in Chemistry, Mathematics, Physics, French and History. B in English Language and English Literature. C in Art & Design and Technology.
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Work Experience

- During PhD *University of Southampton*
Taught maths tutorials for two first-year undergraduate courses and error analysis to first-year chemists. Wrote and maintained the Department of Chemistry web pages and the web pages of two members of staff.
- Summer 1997 *University of Southampton*
Setting up and running a web server and writing software to help with the Chemistry department’s undergraduate teaching.
- Summer 1996 *Oxford Molecular Ltd*
Successfully piloted a project to automate software testing on Apple computers using the Virtual User language.
- July 1995 *Organic Chemistry Summer School*
Working under pressure in the chemistry laboratory 9–5 every day for 4 weeks.
- Summer 1994 *Oxfam Campaigns Office Nottingham*
Voluntary work persuading strangers face to face to help with Oxfam Week.
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Stephen C Phillips

Other Experience

- Summer 1999– *Salsa teaching*
Teaching salsa dance to classes of up to 50 people. Currently teaching regularly, once a week.
- September 1999 *Research Councils' Graduate School*
5 day course covering skills awareness, team-work and personal management.
- June 1995 *BP Team Development in Universities*
Two day course learning team-work skills.
- Jan–June 1995 *Community Interaction Tutor Help Scheme*
Tutoring a GCSE maths student one evening a week.
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Technical Skills

My post-doctoral position involved the object-oriented design and implementation of a complex and flexible molecular mechanics package. My PhD concerned the application of digital signal processing techniques to molecular dynamics simulations. To follow up my original idea in this area I applied my good problem solving skills. I ran long calculations and performed extensive data analysis, often writing both the program that did the calculation and the programs that performed the analysis.

Information Technology

I have programmed in many high-level languages (including C, C++, Fortran, Java, Perl and Python) and various assembly languages. I understand many of the concepts and technologies of GRID computing. I can operate and administer a variety of different machines and operating systems (e.g. IRIX, Linux, MS-Windows, Mac-OS) and, during my post-doctoral employment, was the lead system administrator for the research group's computers. Since 1994 I have maintained a set of web pages which have 3000 visits per day and include Java, JavaScript, CGI scripts and WAP services (see scphillips.com).

Communication and Teamwork

Teaching salsa classes requires the ability to explain complex concepts with enthusiasm—an ability that is useful in all communication. I have taught a GCSE maths student, 1st year maths undergraduates and 1st year chemistry undergraduates. This also developed a firm foundation in clear communication. I have extensive experience of discussing my post doctoral and PhD projects with other scientists and non-scientists, in technical and non-technical language. My work at the Oxfam Campaigns Office was as part of a small team. We went round Nottinghamshire recruiting members of the public on the street. This required good communication, cheerfulness, perseverance and tact. I have also been a member of two University choirs and performed in concerts.

Organisational Skills

In addition to the organisational skills necessary to carry out the development of a large software project, I was also responsible for the design and purchasing of a 70-node Beowulf cluster. I helped to organise and run an MGMS conference at the University of Southampton, taking responsibility for organising presentation equipment and microphones.

References

Available on request.

Publications

Dynamic Service Provisioning Using GRIA SLAs, Boniface, M.J.; Phillips, S.C.; Sanchez-Macian, A.; Surridge, M., in proceedings of Non Functional Properties and Service Level Agreements in Service Oriented Computing Workshop (NFPSLA-SOC'07), September 17 **2007**, Vienna, Austria.

Grid-Based Business Partnerships Using Service Level Agreements, Boniface, M.J.; Phillips, S.C.; Surridge, M., in proceedings of Cracow Grid Workshop, 16-18 October **2006**, Cracow, Poland.

The analysis of molecular dynamics simulations by the Hilbert-Huang Transform, Essex, J.W.; Wiley, A.P.; Gledhill, R.J.; Phillips, S.C.; Swain, M.T., in Hilbert-Huang Transforms in Engineering Applications, Taylor and Francis, **2005**, 245–265.

Parametrization of Reversible Digitally Filtered Molecular Dynamics Simulations, Wiley A.P.; Swain M.T.; Phillips S.C.; Essex J.W.; Edge C.M., *JCTC* **2005**, *1*, 24–35.

Application of the Hilbert-Huang Transform to the Analysis of Molecular Dynamics Simulations, Phillips, S.C.; Gledhill, R.J.; Essex, J.W.; Edge, C.M., *J. Phys. Chem. A* **2003**, *107*, 4869–4876.

Reversible Digitally Filtered Molecular Dynamics, Phillips, S.C.; Swain, M.T.; Wiley, A.P.; Essex, J.W.; Edge, C.M., *J. Phys. Chem. B* **2003**, *107*, 2098–2110.

Digital Signal Processing Methods to Analyze and Enhance Conformational Change, Essex, J.W.; Phillips, S.C.; Gledhill, R.J.; Edge, C.M., Abstracts of Papers of the American Chemical Society 223: 21-Comp Part I, April 7th **2002**

Digitally Filtered Molecular Dynamics: The Frequency Specific Control of Molecular Dynamics Simulations, Phillips, S.C.; Essex, J.W.; Edge, C.M., *J. Chem. Phys.* **2000**, *112*, 2586–2597.