

# JONATHAN BUSCH

81 VICTORIA MOUNT • LEEDS • LS18 4PX  
PHONE 07855 411 284 • E-MAIL [BUSCH.JONATHAN@GMAIL.COM](mailto:BUSCH.JONATHAN@GMAIL.COM)

## EDUCATION

---

### 2006 - April 2010 PhD Theoretical Physics

University of Leeds

On the topic of *Implementations of Quantum Information Processing* with a focus on quantum optics and solid state systems. The work is aimed towards developing novel schemes for quantum computing that bring this technology closer to implementation in a research lab.

#### Publications

J. Busch, E.S. Kyoseva, M. Trupke and A. Beige, “*Entangling distant quantum dots using classical interference*”, *Phys. Rev. A* **78** (R), 040301 (2008).

J. Busch, M. Trupke and A. Beige, “*Creating cavity arrays with common field modes on atom chips*” (awaiting publication)

J. Busch and A. Beige, “*Protecting Subspaces*”, Conference Proceedings

**Presentations:** 1 invited conference talk, 2 conference talks, several smaller seminars and poster presentations.

### 2002 - 2006 MSci (HONS) Physics, 1<sup>st</sup>

Imperial College, London

- Dissertation on *Trends in Social Networks*, a computational study of the formation of trends and herding behaviour resulting from the structure of underlying Social Networks.
- Finalist in the Imperial College Entrepreneurship Centres Ideas Challenge with a Business Plan for an educational software package for sign language.

### 1997 - 2002 Hull Grammar School

- A-Level: AAAA in Physics, Maths, Biology and Chemistry.
- AS-Level: AA in History and General Studies.
- GCSE: 9 at grades A\*-B including English and Maths.

## SKILLS PROFILE

---

### IT

- A computational masters project coded in **C++** provided me with a lot of practical experience of using Object Oriented programming in an agent based model.
- During my research at Leeds, I have also learned to code in **Matlab**, **Fortran** and **C** to simulating quantum systems for my research. MatLab is also used for data analysis.
- I am currently responsible for the maintenance and updating of my research groups website which uses Joomla as its content management system.
- Designed one commercial site and a few personal ones using **CSS** and **HTML** in a standards compliant way.
- Familiarity with **Windows** (for teaching), **Mac OS X** (my work machine) and **Ubuntu Linux** (on my home machine).
- Set up a personal web server as a virtual machine under OS X running Free BSD, Apache, MySQL, PHP and Wordpress.

### **Communication**

- Presenting my research results at an international conference in front of 50 delegates.
- Lead a number of formal and informal seminars in which I have adapted the content and style of my presentation to suit the varied audiences.
- Tutorial leader to a classes of 15 undergraduates in which feedback and interaction with the students enabled me to engage them with the material.
- Written papers on my research, one of which is already published in a leading international journal for a readership of Physics researchers.

### **Teamworking**

- Collaborated with colleagues in Bulgaria and London on a European research project delivering the publication of a paper in an international journal. The success of this project required good communication to ensure a clear direction.
- Worked with a team of five fellow students to produce a business plan that won a place in the finals in the Imperial College Entrepreneurship Challenge. My role was to assess the competition and communicate this to fellow team members and in the business plan.
- Participated in a UKGrad course on Interpersonal Skills. In teamworking exercises I frequently adopted the role of organiser, keeping the team focused on the relevant tasks.

### **Self-motivation**

- Doing a PhD requires a high level of self-motivation. The direction and progress of my research project is dictated primarily by the effort I put into it. My high level of self-motivation is the key to my success in publishing in a high impact factor journal and presenting my work at conferences.
- Focused on personal development, I have attended numerous generic skills courses including public speaking, teamworking and speed reading.

### **Project/Time Management**

- In order to keep an overview of my research, I have learned to use project management and personal time management tools. For time and personal effectiveness management I use a system based loosely on Paul Allen's GTD system.
- Set regular targets with measurable results to track the progress of my work. Successfully complete tasks on deadlines including preparing talks for conferences, completing yearly progression reports and self-imposed deadlines for paper completion.

### **Business Awareness**

- Developed a website for an alternative health clinic considering the clients competitors, financial impact of the site including search engine optimisation and the clients potential customers.
- As a tutorial leader, I tailor the style and content of my tutorials to the needs of the students who are effectively customers of the University. It is essential to remain flexible and take on board feedback quickly because we cannot afford to lose the students

## **ACTIVITIES AND EXTRA INFORMATION**

---

- Responsible for the running and maintenance of my research groups webpage. This includes training new group members in updating their personal profiles and submitting content to the site.
- I have always considered myself an active person. At university I played in team sports but a knee injury has prevented me from being competitive. I now enjoy cycling and have joined my local running club.
- Fluent in both German and English.
- First Aid at work certificate.

### **References available on request**