Paul T. Pham

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Education

University of Washington September 2005—December 2006
Candidate for Doctor of Philosophy in Computer Science March 2010—Present
Current GPA: 3.78/4.0
Expected graduation date June 2013.
Quantum Computing Theory Group
Thesis: Low-depth quantum architectures.
Advisor: Aram Harrow

Massachusetts Institute of Technology
Master of Engineering in Electrical Engineering & Computer Science, February 2005.
Graduate GPA: 4.7/5.0
Thesis: A general-purpose pulse sequencer for quantum computing.
Advisor: Isaac Chuang

Bachelor of Science in Electrical Engineering and Computer Science, June 2004.
Undergraduate GPA: 4.2/5.0

Open Source Experience

Pulse Programmer SourceForge
Project Admin, Lead Developer January 2005—Present
`http://pulse-programmer.org`
Built an open source reconfigurable radio-frequency signal generator for quantum computing and quantum information processing experiments. In use at eight experimental trapped ion research groups around the world.

Quantum Compiler SourceForge, Github
Project Admin, Lead Developer January 2005—Present
`http://quantum-compiler.org`
Developed an open source code in Python and NumPy to implement the Solovay-Kitaev quantum compiling algorithm for generic, multi-qubit gates in SU(d). Simulated the Kitaev-Shen-Vyalyi quantum compiling algorithm in QCL and wrote code to measure its required resources. Accepted as qualifying examination project in the UW CSE Ph.D. program.

Work Experience

Amazon.com Seattle, WA
Software Development Engineer January 2008—June 2009
Endless.com Designer Shoes and Handbags
Manager: Doug Irvine
Maintained a large-scale, high-availability retail website built using Apache Tomcat, J2EE, the Spring dependency-injection framework, jQuery, and Ajax. Implemented a pipeline for customers to write product reviews.

Activities

MIT ACM/IEEE Programming Competition Cambridge, Massachusetts
Contest Chair, Lead Developer, Organizer 2001-2003

`http://www.battlecode.org`
`http://web.mit.edu/ieee/6.370/2003/web/`
Created a long-running programming competition for real-time strategy artificial intelligence (AI) agents, which matches winning student contestants with corporate sponsors that now include Dropbox, Blizzard Entertainment, Amazon, Google, Oracle, D.E. Shaw, Akamai.

Teaching Experience

University of Washington Seattle, Washington
Instructor, Computer Science & Engineering Department

Quantum Computing for Beginners (CSE 490Q) September 2012—Present

Teaching Assistant, Computer Science & Engineering Department

Advanced Internet Services (CSE 454) January 2012—March 2012

The Hardware/Software Interface (CSE 351) April—June 2010

Data Structures (CSE 326) September—December 2006

Software Development Tools (CSE 303) April—June 2006

Algorithms (CSE 417) January—March 2006

Discrete Structures Class (CSE 321) September—December 2005

MIT Elec. Eng. & Computer Science Dept. Cambridge, Massachusetts

Teaching Assistant
Software Engineering Laboratory Class (6.170) January 2004—May 2004

Lab Assistant
Software Engineering Laboratory Class (6.170) September 2002—May 2003

Research Experience

Microsoft Research Seattle, WA
Research Intern June—August 2011
Quantum Architectures and Computation Group
Mentor: Krysta Svore
Designed a 2D nearest-neighbor quantum architecture for period-finding.

University of Washington Dept. of Physics and Astronomy Seattle, WA
Graduate Research Assistant January—July 2007, May—June 2010
Trapped Ion Quantum Computing Group
Advisor: Prof. Boris Blinov
Built a programmable radio-frequency system for ion trap control.

Max Planck Institute for Quantum Optics Garching, Germany
Visiting Ph.D. Student July 2005—August 2005
Quantum Analog Simulation Group
Advisor: Dr. Tobias Schätz
Built a programmable radio-frequency system for ion trap control.

University of Innsbruck Innsbruck, Austria
Visiting Ph.D. Student February 2005—June 2005
Quantum Optics and Spectroscopy Group
Advisor: Univ. Prof. Rainer Blatt
Built a programmable radio-frequency system for ion trap control.

MIT Center for Bits and Atoms Cambridge, Massachusetts
Graduate Research Assistant September 2003—January 2005
quanta Research Group
Advisor: Prof. Isaac Chuang
Designed and built instrumentation for quantum computing experiments.

Microsoft Research Redmond, WA
Research Intern June 2001—September 2001
Invisible Computing Group June 2003—August 2003
Mentors: Alessandro Forin, Johannes Helander
Designed and assembled the electronics for a wireless sensor demo.

References

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