

CONTACT INFORMATION	Dept. Physics & Astronomy Dartmouth College Hanover, NH 03755 Born Sept. 17th, 1978	<i>Voice:</i> (626) 487-2505 <i>E-mail:</i> kaveh.khodjasteh@dartmouth.edu <i>WWW:</i> <a href="http://kaveh.kiewit.dartmouth.edu">http://kaveh.kiewit.dartmouth.edu</a>
OBJECTIVE	Professional career emphasizing innovation and interestingness	
EDUCATION	<p><b>University of Southern California</b>, Los Angeles, CA, USA Ph.D., Physics, August 2008 “DYNAMICAL ERROR SUPPRESSION FOR QUANTUM INFORMATION PROCESSING”</p> <p><b>University of Toronto</b>, Toronto, Canada M.S., Physics, June 2001 Transferred to University of Southern California, 2006</p> <p><b>Sharif University of Technology</b>, Tehran, Iran B.Sc., Physics, June, 2000</p>	
CAREER TRAJECTORY IN NORTH AMERICA	<p><b>Dartmouth College</b>, Post-Doctoral Research Associate [2008-present]</p> <p><b>University of Southern California</b>, Research Assistant, Research Fellow [2006-2008]</p> <p><b>University of Toronto</b>, Teaching Assistant, Research Assistant [2000–2006]</p>	
HONORS AND AWARDS	<p>University of Toronto Scholarship, 2000–2006</p> <p>Iranian National Collegiate Physics Competition: <b>First Place, 2000</b></p> <p>Iranian M. Sc. Level Entrance Exam (Physics): <b>Top Score, 2000</b></p> <p>International Physics Olympiad in Norway: <b>Silver Medal, 1996</b></p>	
COURSEWORK AND BACKGROUND	<ul style="list-style-type: none"> <li>• advanced linear algebra and operator theory, probability theory and stochastic methods, dynamical systems, differential geometry, control theory, approximation theory, graph theory</li> <li>• quantum computing, quantum information theory, quantum control, stochastic control, quantum field theory, condensed matter physics, statistical mechanics, magneto-hydrodynamics, computational physics</li> </ul>	
COMPUTER BACKGROUND AND SKILLS	<ul style="list-style-type: none"> <li>• Languages: Python, Matlab, Mathematica, C++ (STL, some LAPACK and BLAS interfacing), basic MPI, basic MySQL, can “read” Fortran, Java, Pascal, Perl</li> <li>• Monte Carlo simulations of dissipative quantum systems</li> <li>• numerical differential equations</li> <li>• Advanced matrix algebra and list processing</li> <li>• ensemble based stochastic estimation and optimization (Kalman Filter)</li> <li>• Fluid dynamics simulations</li> <li>• Text file processing and simple database processing</li> </ul>	

PEER REVIEWED  
PUBLICATIONS

12. *Limits on Preserving Coherence of a Dephasing Qubit using Pulses*, in preparation (2010)
11. *The size of exponential sums on intervals of the real line*, arXiv preprint: 1006.4323 (2010)
10. *Arbitrarily Accurate Dynamical Control in Open Quantum Systems*, Phys. Rev. Lett. **104**, 090501 (2009). [2](#)
9. *Dynamical Quantum Error Correction of Unitary Operations with Bounded Controls*, Phys. Rev. A **80**, 032314 (2009). [5](#)
8. *Dynamically Error-Corrected Gates for Universal Quantum Computation*, Phys. Rev. Lett. **102**, 080501 (2009). [9](#)
7. *Rigorous bounds on the performance of a hybrid dynamical-decoupling quantum-computing scheme*, Phys. Rev. A **78**, 012355 (2008). [5](#)
6. *Distance bounds on quantum dynamics*, Phys. Rev. A **78**, 012308 (2008). [7](#)
5. *Performance of Deterministic Dynamical Decoupling Schemes: Concatenated and Periodic Pulse Sequences*, Phys. Rev. A **75**, 062310 (2007). [39](#)
4. *Fault-Tolerant Quantum Dynamical Decoupling*, Phys. Rev. Lett. **95**, 180501 (2005). [91](#)
3. *Quantum Computing in the Presence of Detected Spontaneous Emission*, Phys. Rev. A **68**, 022322 (2003). [14](#)
2. *Universal Fault-Tolerant Quantum Computation in the Presence of Spontaneous Emission and Collective Dephasing*, Phys. Rev. Lett. **89**, 197904 (2002). [18](#)
1. *A dynamical approach to a self similar universe*, Astron. & Astrophys. **345**, 22 (1998). [6](#)

RECENT  
CONFERENCE  
PRESENTATIONS

- “Tutorial Lecture on Dynamical Decoupling”. Invited Oral Presentation. 2009 Workshop on Control and optimization of open quantum systems, American Institute of Mathematics, Palo Alto, CA
- “Dynamically Corrected Gates”. Invited Oral Presentation. 2009 International Workshop on Dynamical Decoupling, National Institute of Standards and Technology, Boulder, CO.
- “Quantum Gates that Correct Their Own Errors”. Invited Oral Presentation. 2008 Open Quantum Systems: Decoherence and Control, Harvard University, Cambridge, MA.
- “Dynamical Error Correction for Encoded Quantum Computation”. 2007 1st Conference on Quantum Error Correction, University of Southern California, Los Angeles, CA.
- “Robust dynamical decoupling: feedback-free error correction”. Oral Presentation. 2005 SPIE: Fluctuations and Noise, Austin, TX.
- “Concatenated Dynamical Decoupling Pulse Sequences”. Oral Presentation. 2004 Quantum Information and Quantum Control Conference, University of Toronto, Canada.
- “Universal and Fault Tolerant Quantum Computation in the Presence of Spontaneous Emission”. Oral Presentation. 2003 American Physics Society, March Meeting, Montreal, Canada.

MISCELLANEOUS

- Research Highlighted in *The Economist* on April 1st, 2004, “Bit by Bit”
- Graduated from Alameh Heli High School for Development of Exceptional Talents, Iran 1996
- Fluent in English and Persian, basic German