

Curriculum Vitae of Alex Gottlieb



Education

- 1991 - '98 University of California, Berkeley, California
PhD in Mathematics
- 1986 - '91 Purdue University, West Lafayette, Indiana
BS with Honors in Mathematics

Employment

- 2011 - '12 Mathematics Instructor
University of Hawaii at West Oahu
- 2008 - '11 Project Manager, "Correlation in Quantum Systems"
Supported by a grant from the Vienna Science and Technology Fund
- 2005 - '07 Post-Doc
Wolfgang Pauli Institute, Vienna
- 2001 - '04 Research Associate
Fakultät für Mathematik, Uni. Wien
- 2000 Visiting Assistant Professor
Mathematics Department, UC Berkeley
- 1999 - '00 Visiting Postdoctoral Fellow
Lawrence Berkeley National Laboratory

Grants, Fellowships, and Privileges

- Principal Investigator of research project "Correlation in Quantum Systems": This four-year (2008 - '11) project was affiliated to the Wolfgang Pauli Institute in Vienna and funded by a grant of € 446000 from the WWTF (Vienna Science and Technology Fund). It was one of ten applied mathematics projects that were awarded grants under the € 4.47 million WWTF funding program "Mathematik *und* . . ." of 2007.
- Visiting Scholar, UH Mathematics, 2006 - '10
- Visiting Scholar, UCLA Mathematics, 2004 - '05
- Mathematics Department Fellowship, UC Berkeley, 1994
- Department of Education National Need Fellowship, UC Berkeley, 1991 - '92

Language and Programming Skills

- Native speaker of English.
- Speak French, German, Spanish, Italian, and Mandarin Chinese.
- Some experience programming in C++, Fortran, Matlab, R, Python, HTML/JavaScript, and SQL.

Teaching and Curriculum Development

- Instructor, University of Hawaii West Oahu, Fall 2012:
"College Algebra", "Math for Elementary School Teachers I" and "Math for Elementary School Teachers II"
- Lecturer, University of Hawaii (UH) Mathematics, Summer 2012:
"Calculus I" and "Introduction to Programming"
- Assistant Professor at UH, Fall 2011:
"Numerical Analysis I" and "Calculus for Business and the Social Sciences"
- Instructor, University of Vienna Mathematics, Summer 2011:
"Nonlinear Schrödinger Equations"
- Assistant Professor at UH, Fall 2010:
"Calculus IV" and "Introduction to Programming"
- Assistant Professor at UH, Fall 2009:
"Numerical Analysis I" and "Calculus for Business and the Social Sciences"
- Lecturer at UH, Summer 2008:
"Introduction to Linear Algebra"
- Lecturer at UH, Spring 2008:
"Calculus for Business and the Social Sciences"

- Lecturer at UH, Fall 2007:
"Calculus II"
- Instructor at Hawaii Tokai International College (HTIC), Summer 2007:
"Survey of Mathematics"
- Lecturer at UH, Summer 2007:
"Calculus for Business and the Social Sciences"
- Instructor at HTIC, Spring 2007:
"Survey of Mathematics"
- Lecture series for the Graduate Preparation Program at HTIC, Winter 2007:
"Statistics for Graduate Studies"
- Instructor at HTIC, Fall 2006:
"Trigonometry and Analytic Geometry"
- Lecturer at UH, Summer 2006:
"Calculus for Business and the Social Sciences"
- Calculus teacher for the Native Hawaiian Science and Engineering Mentoring Program (Summer 2006)
- Visiting Assistant Professor at UC Berkeley, Spring 2000:
"Mathematical Tools for Physics"
- Instructional technologies developer for Multivariable Calculus at UC Berkeley, 1996:
coded graphical user interfaces in MatLab for an instructional computer lab and designed a series of lab projects to go with the software.
- Teaching Assistant for four semesters at UC Berkeley, 1994 - '96:
taught vector calculus, linear algebra and differential equations.
- Professional math tutor, 1992 - '93:
earned livelihood tutoring university students.

Professional Service

Referee for two physics journals, one probability journal, one applied mathematics journal, and one pure mathematics journal.

Publications and Manuscripts

Publications

1. A. D. Gottlieb and R. M. Weisshäupl
Strongly separated pairs of core electrons in computed ground states of small molecules. Manuscript under review.
2. A. D. Gottlieb, J. D. Head and D. Perusse
Natural molecular shells as open subsystems of small molecules.

- Int. J. Quant. Chem. 111: 4158 - 4173 (2011)
3. A. D. Gottlieb and T. Schumm
Quantum noise thermometry for bosonic Josephson junctions in the mean field regime.
Phys. Rev. A 79: 063601 (2009)
 4. S. Evans and A. D. Gottlieb
Hyperdeterminantal point processes.
Metrika 69 (2-3): 85 - 99 (2009)
 5. A. D. Gottlieb
Introduction to determinantal point processes from a quantum probability viewpoint.
QP-PQ: Quantum Probability and White Noise Analysis, Volume 20, World Scientific, 2007.
 6. A. D. Gottlieb and N. J. Mauser
Properties of nonfreeness: an entropy measure of electron correlation
Int. J. Quantum Information 5 (6): 815- 827 (2007)
 7. C. Bardos, B. Ducomet, F. Golse, A. D. Gottlieb and N. J. Mauser
The TDHF approximation for Hamiltonians with m-particle interaction potentials.
Communications in Mathematical Sciences 5 (Supplement): 1 - 9 (2007)
 8. A. D. Gottlieb and L. M. Wesoloski
Bardeen's tunneling theory as applied to Scanning Tunneling Microscopy.
Nanotechnology 17: R57 - R65 (2006)
 9. A. D. Gottlieb
Examples of bosonic de Finetti states over finite dimensional Hilbert spaces.
Journal of Statistical Physics 121 (3-4): 497 - 509 (2005)
 10. A. D. Gottlieb
Convergence of continuous-time quantum walk on the line.
Phys. Rev. E 72: 047102 (2005)
 11. A. D. Gottlieb and N. J. Mauser
New measure of electron correlation.
Phys. Rev. Lett. 95 (12): 123003 (2005)
 12. A. D. Gottlieb, S. Janson and P. Scudo
Convergence of quantum walks in d-dimensional Euclidean space.
Infinite Dimensional Analysis, Quantum Probability and Related Topics 8 (1): 129 - 140 (2005)
 13. C. Bardos, F. Golse, A. D. Gottlieb and N. J. Mauser
Accuracy of the time-dependent Hartree-Fock approximation for uncorrelated initial states.
Journal of Statistical Physics 115 (3-4): 1037-1055 (2004)
 14. C. Bardos, F. Golse, A. D. Gottlieb and N. J. Mauser
On the derivation of nonlinear Schrödinger and Vlasov equations.
IMA Volumes in Mathematics and its Applications, Volume 136: Dispersive Transport Equations and Multiscale Models (2004).
 15. C. Bardos, F. Golse, A. D. Gottlieb and N. J. Mauser

- Mean-field dynamics of fermions and the time-dependent Hartree-Fock equation.*
Journal des Mathématiques Pures et Appliquées 82 (6): 665 - 683 (2003)
16. A. D. Gottlieb
Asymptotic equivalence of the jackknife and infinitesimal jackknife variance estimators for some smooth statistics.
Annals of the Institute of Statistical Mathematics 55 (3): 555 - 561 (2003)
17. A. D. Gottlieb
Propagation of chaos in classical and quantum kinetics.
Stochastic Analysis and Mathematical Physics II (R. Rebolledo, ed.)
Trends in Mathematics, Birkhäuser, 2003.
18. A. D. Gottlieb and J. Lipman
Group-theoretic axioms for projective geometry.
Canadian Journal of Mathematics 43 (1): 89 - 107 (1991)

Technical Reports and Manuscripts

19. A. D. Gottlieb and T. Schumm
Opposite sign correlations in fermion or boson gases.
Archived at arXiv:0705.3491v1 (2007)
20. A. D. Gottlieb
Two examples of discrete-time quantum walks taking continuous steps.
Archived at quant-ph/0310026 (2003)
21. A. D. Gottlieb
The propagation of chaos by quantum systems: an extended abstract.
Mini-proceedings: Workshop on Stochastics and Quantum Physics,
MaPhySto, Aarhus, Denmark. Miscellanea no. 16 (1999)
22. A. D. Gottlieb
Propagation of molecular chaos by quantum systems and the dynamics of the Curie-Weiss model.
CPAM, University of California at Berkeley PAM - 764 (1999)
23. A. D. Gottlieb and T. Burin des Rozières
Experiments in first-order Optimal Prediction.
Lawrence Berkeley National Laboratory LBNL - 44191 (1999)
24. A. D. Gottlieb
Markov transitions and the propagation of chaos. PhD thesis.
CPAM, University of California at Berkeley PAM - 756 (1998)

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*Confucius said, "Do not be concerned that you lack an official position, but rather concern yourself with the means by which you might take your stand. Do not be concerned that no one has heard of you, but rather strive to become a person worthy of being known."*

----- The Analects of Confucius 4.14 (Edward G. Slingerland, translation)

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