

Julia Erhard

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Education

PhD student in Mathematics, University of California at Berkeley, Aug. 2009-

Research area: Computability Theory and Randomness

Advanced to candidacy in April 2011

M.Sc. Mathematics and the Foundations of Computer Science, University of Oxford, 2009

Result: Distinction

Dissertation: On T-periodic satisfiability of Metric Temporal Logic

B.A. Mathematics, University of Cambridge, 2008

Result: First Class Honors (ranked 15th of approx. 220 students)

Robert-Schuman-Gymnasium Cham, Sept. 1997 - June 2005

Result: 1.1 overall (where 1.0 best, 6.0 worst), 15/15 in Mathematics and Physics

Skipped year 11

Selected courses and programming experience

Combinatorial algorithms and data structures, Spring 2011

Final project: On-line bipartite matchings and the AdWords problem

Statistical learning theory, Fall 2010

Final project: A proof of the correctness of loopy belief propagation for graphs with a single loop

Introduction to symbolic programming (Scheme), Fall 2010

Reading course on randomness and computability, Fall 2009 and Spring 2010

Theory of recursive functions, Fall 2009

Categories, proofs and processes, Spring 2009

Randomized algorithms, Fall 2008

Computer aided formal verification, Fall 2008

Statistics, Spring 2008

Computational projects (8 programming projects as part of the BA degree in Cambridge), 2007-2008

Practical experience of programming in C; knowledge of Java and Scheme

Some experience of working with Matlab and HTML

Work history

Graduate Student Instructor at UC Berkeley, Sept. 2009-

Upper division CS course Efficient Algorithms and Intractable Problems, Spring 2012

Lower division Linear Algebra, Spring 2010, Spring 2011 and Fall 2011

Lower division Calculus, Fall 2009 and Fall 2010

Software Engineering Intern at Voltage Security Inc., Cupertino, May - Aug. 2011

Performance optimization of the Voltage multi-precision library (speed improvement by a factor of 10); including implementation of CIOS Montgomery multiplication and Montgomery inversion

Performance improvement (25%-63%) and documentation of an identity-based encryption algorithm (Boneh-Boyen-Verkauteeren) based on elliptic curves and Optimal Pairing operations

Implementation of elliptic curve DSA

Instructor for calculus at UC Berkeley, Summer 2010

Teaching Assistant for axiomatic set theory at the University of Oxford, Spring 2009

Presented talks, conferences and summer schools

Recursion Theory Seminar, UC Berkeley, Sept. 2009 -

Presented talk: Reverse Mathematics for Ramsey's Theorem for Pairs (Two technical talks in Nov. 2011)

Association for Symbolic Logic Meeting, Berkeley, March 2011

Conference on logic, computability and randomness, University of Notre Dame, May 2010

Graduate student conference in Logic, Madison, Wisconsin, May 2010

Many cheerful facts, University of Berkeley, April 2010

Presented talk: An independent statement of pure mathematics

Workshop on large cardinals and descriptive set theory, Vienna, June 2009

Junior logic seminar, Oxford, May 2009

Presented talk: Reverse mathematics

Conference for young researchers in mathematical sciences, Cambridge, April 2009

Presented talk: Reverse mathematics and Ramsey's Theorems

Summer school on set theory and recursion theory, Singapore, July 2008

Summer school on logic and formal epistemology, Carnegie Mellon, June 2008

Awards and scholarships

EPSRC studentship, Oct. 2008 - Sept. 2009

Thatcher prize of Fitzwilliam College, 2008

1912 Senior scholarship of Fitzwilliam College, 2008

Scholarship of the Cambridge European Trust, Oct. 2005 - July 2008

Bayerische Eliteförderung, 2005

Prize of the Deutsche Physikalische Gesellschaft for outstanding exam results in physics, 2005

e-fellows.net Stipendium, 2005

Wilhelm und Else Heraeus-Stipendium, 2004

Mathematical competitions

Winner of the first prize of "Girls Go Science" (extended course work competition), 2005

Title: Paradox of Banach-Tarski

Bundeswettbewerb Mathematik (national contest):

2003: acknowledgment in first round

2004: first prize in first round and acknowledgment in second round

Landeswettbewerb Mathematik Bayern (county-wide contest):

2000 and 2001: third prize in first round

2002 and 2003: first prize in both rounds

Honorary posts

Mentor for the UKMT mentoring scheme, Nov. 2006 - Aug. 2009

President of the Cambridge University Mathematical Society, March 2007 - March 2008

Vice president of the Cambridge University Mathematical Society, March 2006 - March 2007

Tutor at secondary school, Sept. 2002 - July 2003

Last updated: January 13, 2012