Dr. David Ferrone

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Education

Ph.D. Pure Mathematics, University of Connecticut, May 2012

M.S. Pure Mathematics, University of Connecticut, 2008.

B.S. Pure Mathematics (minor in Statistics), University of Connecticut, 2006.

Teaching Experience

Adjunct Professor at Johnson & Wales University, 2018 - 2021.

Adjunct Professor at CCRI, Fall 2018.

Visiting Assistant Professor (VAP) at Providence College, Fall 2014 - Spring 2020.

Lecturer at Providence College, Fall 2013.

Assistant Professor in Residence (VAP) at the University of Connecticut, Fall 2012 - Spring 2014.

Teaching Assistant (TA) at the University of Connecticut, Fall 2006 - Spring 2012.

Personal Information and Extra Work Experience

Technical Editing for fellow mathematicians. Correcting grammar and typos, rephrasing for clarity for numerous articles in Applied Mathematics. 2013 - present.

Worked as the "block-scheduler" and academic advisor for the UConn College of Liberal Arts and Sciences (CLAS). (Creating course schedules that avoid time conflicts for incoming freshmen, attending meetings regarding enrollment capacity, and advising incoming B.S. students on Mathematics courses.) Summers 2009-2012.

Created the website for the South Park Inn Medical Clinic (A facility run by UConn medical students, serving the homeless community in Hartford, CT.) 2012.

Wrote Python and Matlab code for my thesis, relating to wavelets and the cascade algorithm.

Created the Michael Dorfman Buddhism Archive, a tool for filtering Reddit threads for keywords from this specific user. (Makes use of the JSON and CGI libraries in Perl.) 2017.

Created "Reddit Comment Search" (code available on github), free command-line software which generalizes the above tool; downloading reddit threads between given dates and searches the data for given attributes (e.g. user names or keywords). 2017.

Created a GUI tool using the Wx library in Perl for logging whois and host information about given domain names. 2017.

Created a basic diet-tracking app with local web storage in Javascript. 2018.

My personal websites make use of Perl Dancer on linode with nginx. 2021.

Proficient with GNU/Linux, Perl, LaTeX, HTML/CSS, and Emacs. Working knowledge of Matlab/GNU-Octave, Python, and BASH. Familiar with Rust, C, C++, Javascript, PHP, Haskell, R, SAS, Mathematica, SQL, Excel and Filemaker Pro, Mac OS X, and Windows.

Teaching Experience (In Detail)

Assistant Professor in the Mathematics Department at Providence College from 2014-2020:

Business Analysis I (Math 107 - Fall 2013, Spring 2015, Spring 2016, Spring 2017, Fall 2017, Spring 2018, Spring 2019, Fall 2019)

Business Analysis II (Math 108 - Fall 2014, Spring 2015, Fall 2015, Spring 2016, Fall 2016, Fall 2017, Spring 2018)

Calculus I (Math 109 - Fall 2014, Fall 2015, Fall 2016)

Calculus II (Math 110 - Summer 2015, Spring 2017)

Data Analytics (CS 120 - Spring 2019, Fall 2019)

Primary Instructor (or Teaching Assistant, if noted) in the Mathematics Department at the University of Connecticut from 2006-2014:

Problem Solving (Math 1020 - Winter 2011)

Discrete Mathematics (Math 1030 - Fall 2013)

Pre-Calculus (Math 1060 - Fall 2008, Spring 2009, Fall 2009, Winter 2010, Winter 2012)

Finite Mathematics for Business and Economics (Math 1070 - Fall 2006, Coordinator Fall 2012 & Spring 2014)

Calculus for Business and Economics (Math 1071 - TA Spring 2010, Spring 2012)

Calculus I (Math 1131 - Summer 2008, Spring 2009)

Calculus II (Math 1132 - TA Fall 2010, Summer 2012)

Multivariable Calculus (Math 2110 - Fall 2012, Summer 2013, 2×Fall 2013)

Applied Linear Algebra (Math 2210 - Spring 2014)

Differential Equations (Math 2410 - Fall 2011, Spring 2011, Spring 2013)

History of Mathematics (Math 2720W - Spring 2013)

Differential Equations II (Math 3410 - Spring 2014)

Coordinator for over 600 students in Business Mathematics in fall of 2012 (and for 200 students in spring of 2014). Taught two large lectures of 150 students each. Created common homework assignments, quizzes, reviews, and exams.

Graduate Supervisor and tutor for the *Quantitative Learning Center (Q-Center)* (An ever-growing free tutoring center in Chemistry, Mathematics, Physics, and Statistics. Besides tutoring, this work included supervising undergraduate tutors, data entry, and documentation regarding the use of their database and website.) 2004-2009.

Tutor and advisor for the UConn Center for Academic Programs (CAP) (A summer program for underprivileged students from various ethnic or economic backgrounds) Summers 2007, 2008, 2010, 2011.

Instructor (Calculus I) for the UConn BRIDGE Program (A component of the School of Engineering's Diversity Program) Summer 2008.

Produced images (using Python, Inkscape, and GIMP) and slides (using Beamer in LaTeX) for an online Precalculus (Math 1060) course, Summer 2012

Research Interests

Wavelet Theory, Approximation & Interpolation Theory, Harmonic Analysis, Functional Analysis, Real and Complex Analysis. Data Analysis and Statistics.

Publications

D. Ferrone, *Finite Biorthogonal Transforms and Multiresolution Analyses on Intervals*, International Journal of Tomography and Simulation, Vol 28, No 1 (2015)

D. Ferrone, V. Oussa *Linear Independence of a Finite Set of Dilations by a One-Parameter Matrix Lie Group*, International Journal of Pure and Applied Mathematics, Vol. 84, No. 2 (2013)

A. Teplyaev, B. Boyle, K. Cekala, D. Ferrone, and N. Rifkin, *Electrical Resistance of N-gasket Fractal Networks*, Pacific Journal of Mathematics **233** pp15–40 (2007),

Presentations

The Game of Go, Wentworth Institute of Technology Math Club, Boston, MA, November 2012.

Finite Biorthogonal Transforms and Multiresolution Analyses on Intervals, February Fourier Talks, College Park, MD, February 2012.

Finite Biorthogonal Transforms and Multiresolution Analyses on Intervals, Joint Mathematics Meeting, Boston, MA, January 2012.

Efficient Coding of Natural Sound, SIGMA seminar, University of Connecticut, September 2011.

The Cantor Function, SIGMA seminar, University of Connecticut, March 2010.

Electrical Resistance of N-gasket Fractal Networks, Frontiers in Undergraduate Research, University of Connecticut, April 2006.

Service

SIGMA (Graduate) Seminar organizer, University of Connecticut, 2008-2010.

Founding member of the *Directed Reading Program* (DRP), an undergraduate independent reading program, University of Connecticut, 2008.

Member of TANet (Teaching Assistant Network). Graduate student mentor for first-year graduate students in the mathematics department.

SIGMA and DRP webmaster, 2008-2010. TANet webmaster 2010-2012.

Mentored a Molecular Cell Biology undergraduate in an independent study in Genetics, Fall 2011.

Co-organizer for the Mathematics Teaching Philosophy Statements Workshop, Fall 2009.

Organizer for Q-Center Workshops (on mathematics and pedagogy, for students and tutors), 2006-2008.

Honors & Memberships

Received the Connie Strange UConn Graduate Community Award, 2012.

Awarded the Doctoral Dissertation Fellowship from the UConn Graduate School, Fall 2011.

Member of the American Mathematical Society, 2006 - 2018.

Induction into Pi Mu Epsilon, National Mathematics Honor Society, 2005.

Conferences Attended

Joint Mathematics Meeting, Atlanta, GA, January 2017.

Joint Mathematics Meeting, San Diego, CA, January 2013.

February Fourier Talks, College Park, MD, February 2012.

Joint Mathematics Meeting, Boston, MA, January 2012.

AMS Eastern Sectional Meeting, Syracuse University, October 2010.

From Banach Spaces to Frame Theory and Applications, University of Maryland, May 2010.