Andrew Zigerelli

Education

2014-2015	*University of Pittsburgh* (Pittsburgh, PA)
	Bachelor of Science in Mathematics
	Major GPA: 4.00
2010-2013	*Drexel University* (Philadelphia, PA)
	Mathematics & Computer Science

Technical Experience

Programming Languages	C++, CUDA, Matlab, Java, Python, Maple, Javascript

Work Experience

June 2015 – February 2016

Research Assistant, Drexel University, Department of Mathematics

Performed scientific programming. At Drexel, under Dr. Thomas Yu, implemented the software to model membranes and moved calculations from CPU to GPU. This modelling involved geometric computation and solving the resulting optimization problem. The optimization problem is described here.

Implemented code for non-linear optimization problems in biophysics utilizing SNOPT (Sparse Nonlinear OPTimizer)

Languages/Software Used: C++, C, CUDA, Matlab, SNOPT

June 2014 - January 2015

Research Assistant, Pittsburgh Supercomputing Center

Helped to modify a computational physics package which calculated electronic structures for different materials.

Assisted Dr. Yang Wang, a research physicist at the Pittsburgh Supercomputing Center, who has a large software package used for materials engineering. This involved a heavy computation in quantum mechanics. It is described here.

Assisted in translating code from Fortran to C, and then move some of the computation from CPU to GPU using CUDA.

Worked to speed up software so that solid state physicists could get results more quickly, as computation may take days, even on modern supercomputers.

Languages/Software used: C, C++, CUDA, Fortran

April 2012 – September 2013

Research Assistant, Drexel University, Department of Mathematics

Developed a software package to model biological membranes in varying physical conditions.

Awarded Barry M. Goldwater Scholarship for this work.

Other duties similar to Drexel Research Assistant position description above.

Languages/Software used: C++, C, Matlab

April 2011 - September 2013

Tutor, Drexel University, Department of Mathematics

Tutored undergraduate math classes daily for small groups of students and individuals.

Honors and Awards

Barry M. Goldwater Scholarship

Mathematics Departmental Honors, University of Pittsburgh

Drexel Arts and Sciences Research Day – 2nd Place

Frank Williams Prize

Dean's List, University of Pittsburgh

Dean's List, Drexel University

A.J. Drexel Scholarship

Valedictorian – Ambridge High School

Relevant Coursework

Graduate Formal Verification in Cryptography, Data Structures & Algorithms, Real Analysis, Complex Analysis, Functional Analysis, Ordinary Differential Equations

Undergraduate Computer Programming (C++), Computer Organization & Assembly Language, Optimization Theory, Numerial Analysis, Probability & Statistics, Linear Algebra, Fourier Analysis, Partial Differential Equations, Abstract Algebra, Topology

Activities

Firefighter, Economy, PA

Drexel Actuarial Student Association, Vice President

Drexel Autism Support Program, Mentor

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