

Alexander Ford Hahn

Present Address

505 West 54th Street, Apt 1116, New York, NY, 10019
Email- Afh53@Cornell.edu, phone (845) 248-2761

GitHub: <https://github.com/MonsieurLilBakingSoda?tab=repositories>

Permanent Address

117 Joy Drive
Valley Cottage, NY 10989

Experience

Nomura Securities International, Tech Analyst
New York, NY

August '14 - Present

Currently working on the third leg of a 1.5 year long automation project. Phase I automated Nomura America's Fixed Income OTC Derivatives trading desk platforms. From pricing/ valuation functions, Cash and Settlement processes, to financial ledger postings, I was a junior tech analyst working alongside various areas of the firm. Phase II focused on Nomura America's Equity OTC Derivatives. With the completion of the first phase and team re-orgs I was promoted to be the lead tech analyst of the project and managed the entire project. Similar to phase I I worked with the full spectrum of the firm, from the London quants, traders, Ops, Product Controllers, a multitude of different tech teams. Some tasks include investigating pricing and valuation models, building xml messages and file feeds, creating test scripts/ harnesses, and automated a full front to back STP flow for the OTC Derivatives desk at Nomura. With the completion of Phase I&II ~20 operational employees globally were let go by the firm. Phase III is currently focused around complex exotic notes and bonds, hedged with various swap models to create custom tailored financial products for clients.

Cornell Mathematics Department, Teaching Assistant
Cornell, Ithaca NY

August '13 - May '14

Two years math center teaching experience with over 100 undergraduates. The majority came for Calculus 1 & 2, Linear Algebra, Multivariable Calculus, and Differential Equations. As per my concentration in mathematical physics/scientific computing I was allocated more towards the physics undergrads and their relevant courses: ODE and PDE solver techniques, linear algebra, Lie Theory, and Matrix computation algorithms (Numerical Methods). Furthermore, I TA'ed a mechanics 101 course and assisted in laser cavity cooling research during the summer of 2013 through Cornell at The University of Shanghai for Science and Technology.

Education

Cornell University B.A. May 2014, **Major:** Mathematics **Concentrations:** Mathematical Physics, Scientific Computing, Numerical Analysis, **High School:** Nyack High School (2006-2010) National Merit Scholar

Skills/Technology

General Purpose Languages (by experience): Python, C++, OCaml

Domain Specific Languages: MATLAB, LaTeX, SQL, Bash/Shell Mathematica

Other: Advanced VIM user, Emacs for OCaml for various reasons, advanced excel user

Implementation of many of "Numerical Recipes in C++" by Professor Teukolsky and "Matrix Computations" by Professor Van Loan)

Coursework

(* denotes graduate (PhD) level courses)

- | | | |
|--|--|--|
| • Quantum Physics (various) | • Computational Physics* (C++, Mathematica) | • MATLAB |
| • Functional programming and Data Structures (OCaml) | • Honors Intro to Mathematical Analysis | • Techniques in Exoplanetary Systems Detection |
| • Quantum Information Processing* (quantum computing) | • Numerical Analysis (ODE's and PDE's, MATLAB) | • Electricity and Magnetism |
| • Matrix Lie Groups | • Multivariable Calculus for Engineers | • Mechanics & Kinematics |
| • Data Structures & Object Oriented Programming (Java) | • Linear Algebra | • Thermodynamic and Statistical Physics |
| • Numerical Analysis (Linear and Nonlinear EQ's, MATLAB) | • General & Special Relativity | • Matrix Computations* (CS, MATLAB) |
| | | • Number Theory |

Honors & Activities

National Merit Scholar, Cornell Mathematical Modeling Competition (MCM), Cornell Symphony Orchestra, Cornell United Club Soccer, Cornell Math and Physics Club, Association of CS Undergraduates