Alexander Ford Hahn

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Experience

Nomura Securities International, Technical Analyst 8/13-Present
New York, NY
Currently working on the second leg of a 1.5 year long automation project. First phase focused on Nomura America's Fixed Income trading desk for OTC derivatives. Current phase is centered around Equity linked OTC derivatives. Another larger task of mine is reworking Nomura America Finance LLC's FI and Equity linked notes trade processing and management structure. Both projects are critical to achieve an overarching legacy mainframe decommission project and realize the Straight Through Automated Processing golden standard enabling much higher trade volume and efficiency for numerous products and valuation types.

Cornell Mathematics Department, teaching assistant 8/13-Present
Cornell, Ithaca NY
Two years teaching experience with over 100 undergraduates. Main courses included, Calculus 1 & 2, Linear Algebra, Multivariable Calculus, and intro MATLAB. As per my concentration in mathematical physics 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).

Physics Teacher, and OCSEP Ambassador 5/13-8/13
Oxbridge China Student Education Program (OCSEP), Shanghai China
TA and Grading responsibilities for an Intro to Mechanics Course geared towards Chinese International Students in Shanghai.

Education

Cornell University B.S. May 2014, **Majors**: Mathematics, Physics **Concentrations**: Mathematical Physics, Quantum Physics, Scientific Computing Nyack High School (2006-2010) National Merit Scholar

Coursework

(**Languages/technologies proficient by skill level**: MATLAB, Python, LaTeX, SQL, bash/ shell scripting, Vim, OCaml Mathematica, (some C++ but mainly in the context of scientific computing/Numerical Analysis, implementation of many of "Numerical Recipes" by professor Teukolsky and Van Loan)

- Quantum Physics
- Functional programming and Data Structures (OCaml)
- Quantum Information Processing* (quantum computing)
- Matrix Lie Groups
- Data Structures & Object Oriented Programming (Java)
- Numerical Analysis (Linear and Nonlinear EQ's)
- Computational Physics* (C++, Mathematica)
- Honors Intro Analysis
- Numerical Analysis (ODE's and PDE's)
- Multivariable Calculus for Engineers
- Linear Algebra
- Special Relativity
- MATLAB
- Exoplanetary Systems
- Electricity and Magnetism
- Mechanics
- Two semesters of French
- Thermodynamic and Statistical Physics
- Matrix Computations* (CS)
- Applicable Algebra

(* *denotes graduate (PhD) level courses*)

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