Alexander Hahn

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Education

- **Cornell University** — Ithaca, New York
  Bachelors - Mathematics, concentration in Mathematical Physics — *September 2010 - May 2014*

Skills Summary

- **Languages**: R, Haskell, Python, Bash/Unix Commandline tools & scripting, SQL/kdb, Scala, OCaml
- **Technical**: Linux, Git/Travis, Tmux, AWS (S3, EC2, Batch, CloudWatch), MOSEK, Docker, Emacs, Vim, nix, IntelliJ
- **Quantitative**: Statistical Modeling, Quantitative Trading (Execution), Portfolio Construction/Analysis (constrained optimization), Data Processing, Forecasting, Scientific Computing with Linear & Non-linear Numerical Methods

Experience

- **Bot Lab LP (Schonfeld external fund)** — New York, NY
  Quantitative Trader — *April 2019 - Present*
  - **Overview**: Built a ∼ daily frequency US Equities statistical arbitrage strategy alongside a Citadel quant portfolio manager (main pm) and Stanford CS PhD (Infra Engineer) exclusive to Schonfeld Strategic Advisors. Managed three additional employees with a 100MM initial allocation.
  - **Alpha Generation**:
    • Design and analysis of forecasts across 5 thematic buckets: Market Data, Fundamental, Sentiment, Microstructure, and Cross Asset.
    • Lead the front to back development of three of our eight main signals. Additionally maintained and updated the full suite of signals. This entails performance analysis, additional feature construction/removal, studies and updates to fitting procedures, etc.
    • Built and refined our second layer fit to ensemble the base signals into a master signal. Our master signal consistently performs well with an In sample correlation with the one day forward (residual) return (IC) of 3%, out of sample, 2%, and in Live 2.5%.
    • High level areas of current research: Changes to the response (forward return residualized to Barra's usfast), new alphas/datasets, optimizing prediction frequencies/ multiperiod prediction models, applications of statistical learning techniques to individual alphas as well as alpha combinations eg regularization hyperparameter tuning.
  - **Portfolio Construction**:
    • Helped implement and study our target portfolio optimization in MOSEK with studies/prototypes/analysis in R.
    • Objective: choose a target portfolio (TMV → interger positions) that maximizes expost return (single and multiperiod constructions) with a penalty on risk, trading (TCA), and impact.
    • Constraints: linear constraints- bound industry/style factor exposure, locates, trading limits, position limits, gmv utilization, etc. Quadratic constraints- risk, round/odd lot optimization, several failed experiments on the quadratic constraint side.
    • Added additional factors to risk model as needed/ requested by investors. Trained additional factors, eg stay at home vs covid recovery factor, election factors, China exposures related factors, Ukraine/ Russia factors, election factors, etc.
    • Achieved a consistent 90-95% idio risk portfolio (to USFAST) in backtest, consistent with Live portfolio.
  - **Trading/ Execution**:
    • Traded over 12 billion USD via 4 execution brokers over the last 3 years across ∼ 4000 unique publicly traded US Equities.
    • As the firm's quant trader I had final sign off responsibility to review and submit all trading baskets Bot Lab sent to the execution brokers via Schonfeld's OMS (JSON interface to fix).
    • Three statically generated baskets of orders per day - open auction, intraday, close auction.
    • Research: I developed models to analyze and determine: allocation amongst brokers, allocation amongst trading algos, static schedule logic (trade windows, algo instructions, auction participations), etc. Additionally, I reviewed execution performance/ TCA's with brokers (and Schonfeld) and incorporated findings into internal work/ trading decisions.
- **Bridgewater Associates** — Glendinning/Westport, CT
  Investment Engineer & Production Integration Engineer — *Dec 2016 - March 2019*
  - **Macro Economic Model Updates**: Systemized Volume, Open Interest, and Greek Estimates of Brazilian options/futures contracts into Bridgewater's Data and Backtesting platform.
  - **Production Integration Engineer - Team Lead**: Led a team of six Engineers to assist the Research Department in utilizing Bridgewater's main Backtesting/Signal Generation Platform (Lightspeed), and diagnostic tools (Fusion - advanced UI charting tool). Supported Production Modules and operations team in running live/ production issues. Supported Researchers' various use cases and implementations of logic into the platform. Added functionality to the Investment Engineer/Associate user-facing API as needed.
- **Nomura** — New York, NY
  Technology Analyst — *August 2014 - November 2016*
  - **Automation and Support of Structured Products**: Worked on a team to systemize Nomura's Equity Linked Bond business enabling the growth of the book. Helped implement the STP (straight through processing) of notes from issuance to expiration (or redemption). This included pricing/valuation, periodic coupon/ payment analysis, risk analysis / hedging (index and dynamic). Worked alongside a trader and desk quant to help support the growth of the portfolio to 24 large notional Notes with tenors varying from 1-10 years.
  - **Security Master**: Supported Nomura's Reference database. Rationalized and helped maintain consistency between numerous security identifiers.