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1 PROFESSIONAL EXPERIENCE

- **Founder & Director, Vonde Consulting Ltd., UK** **01/2020 – present**
  - **Execution algorithm** for commodities in China. Using C++ pre-defined interface, I am building a TWAP strategy to replace the current execution algo in the hedge fund. Note that this is an on-going project;
  - **Execution algorithm** for trading perpetual crypto futures on Binance. The framework includes MDS, quant service (for SMD, signals...), strategy engine and order router (with only fundamental functions). Currently, float and TWAP strategies are prototyped in Python;
  - **Active portfolio construction and statistical abitrage** based on technical signals and high frequency econometric models, using crypto tick-level market data;
  - **High-frequency crypto trading and backtesting platform** using tick-level data, developed in Python and C++ with proper functional and unit tests, deployed by docker containers;
  - **Efficient backtesting system for low-frequency trading strategies** as a contractual project for a US-based hedge fund, using level 3 market data, developed in Scala using Spark, deployed on AWS EMR;
  - **Water level prediction neural network** developed in Python using Tensorflow, trained on Tencent cloud, deployed for five cities in China.

- **Founder & Head of Development, frischdaten UG, Germany** **04/2015 – present**
  - **LOBSTER data engine** constructing NASDAQ order book and order flow, using TotalView-ITCH (level 3 market data stream), developed in Java.

- **Director, AES Credit-Suisse, UK** **07/2020 – 04/2022**
  - **Signal enhanced execution strategies** adjusting schedule-based execution algo, such as VWAP, by directional signals;
  - **Desk daily cover** including quant guidance for dev and data teams, research advice for junior quants, algo advice and customisation for clients.

- **Vice President, SMAD Barclays, UK** **08/2018 – 11/2019**
  - **Execution strategy enhancements** including customisable-titled VWAP, impact model for SOR;
  - **Desk daily cover** including TCA reports, algo advice for clients.

- **Vice President, AES Credit-Suisse, UK** **07/2016 – 08/2018**
  - **Commodities intra-day volume regime shift model** detecting volume curve break points using historical data;
  - **Adaptive VWAP** choosing the best VWAP sub-strategies based on client order characteristics in trading time using a machine learning model;
  - **New behavior of liquidty-seeking strategy** using a configurable continuous response function for Guerrilla algo.

- **Associate Director, Electronic Trading UBS, UK** **11/2013 – 07/2016**
  - **Pre-trade costs model** using an exponential kernel, providing a significant improvement on the pre-trade estimation;
  - **Stop-loss alert model** triggering an alarm when a particular stop-loss order likely causes a intra-day market turbulence;
  - **Dark IOC routing study** analyzing the liquidity gain and loss of SOR ALP tactics, suggesting a dynamic control on taking the liquidity from the dark pools.
- **Scientific Employee, QPL Deutsche Bank, Germany** **02/2008 – 07/2011**
  - **Financial econometric models** for the limit order book and the order flow.

2 EDUCATIONS AND DEGREES

- **Doctorate, Humboldt Universität zu Berlin, Germany** **02/2008 – 02/2012**
  - **Applied econometric models** on high frequency limit order book, order flow and dark liquidity using ultra-high-frequency level 3 market data;
  - **Graded as *summa cum laude*** recognising my extraordinary academic achievements.
- **Master student, Royal Inst. of Tech. (KTH), Sweden** **09/2006 – 02/2008**
  - **Applied mathematics** focusing on numerical methods for PDEs and the high-performance computation.
- **M.Sc., University of Copenhagen, Denmark** **04/2004 – 12/2007**
  - **Economics** including courses of macro, micro-economics and econometrics etc., and a thesis on derivative pricing with Lévy processes.

3 PUBLICATIONS

- Shen, Y. and R. Huang (2014) "Risk-averse reinforcement learning for algorithmic trading", Conference on Computational Intelligence for Financial Engineering & Economics (CIFEr), 2014 IEEE.
- Hautsch, N. and R. Huang (2012), "The market impact of a limit order", Journal of Economic Dynamics and Control, 36, 501 – 522.
- Hautsch, N. and R. Huang (2012), "Limit order flow, market impact and optimal order sizes: Evidence from NASDAQ TotalView-ITCH data" in: "Market Microstructure: Confronting Many Viewpoints", F. Abergel, J.-P. Bouchaud, T. Foucault, C. Lehal, M. Rosenbaum (eds.), Wiley Intersciences.
- Hautsch, N. and R. Huang (2012), "On the dark side of the market: Identifying and analyzing hidden order placements" Discussion Paper 2012-4, CRC 649, Humboldt Universität zu Berlin.
- Huang, R. and T. Xiao (2012), "How much can hidden liquidity improve the trading price" Working Paper, Humboldt Universität zu Berlin and Harvard University.
- Huang, R. and T. Polak (2011), "LOBSTER: Limit order book reconstruction system" Working Paper, Humboldt Universität zu Berlin.

4 PROGRAMMING SKILLS

- **Python** at professional level, using Numpy, Pandas and Scikit-learn for research purpose, integrating C++ libraries using Cython, familiar with Unit Test (including Mock) and type hint;
- **GIT and Docker** at professional level, using daily in development and deployment;
- **C++** at experienced level, familiar with GoogleTest for developing reliable libraries;
- **SQL** at experienced level, familiar with **MySQL, PostgreSQL** and **TimescaleDB**;
- **Linux user** with 20-year experience, familiar with most of the common tools;
- **Other programming languages and tools** including Matlab (10+ years), Rust, Java, Scala, KDB+/q, R, OneTick, Apache Spark and Redpandas/Kafka.