Chong Zhai

New York, NY, 11375 (646) 300-5565 – czhai.ai@gmail.com

EXPERIENCE

Morgan Stanley **New York, NY**

Quantitative Modeling, Vice President *2017-Now*

- Jumbo hybrid and short term ARM, Conforming FRM loan-level prepayment, Roll-rate and loss severity model
    - Built the model with R and Python
    - Implementation in both Monte Carlo simulation and matrix calculation;
    - Model performance monitoring and turning;
- Mortgage Servicing Right (MSR) Model and Home Equity Line of Credit (HELOC) Model
    - Implement both models in C++
- Endogenous current coupon and mortgage rate modeling
    - Improved existing econometric model and tried implied sensitivity approach
- Support origination unit and whole loan trading desk
    - daily analytics and risk report, price attribute and model performance monitoring report

MSCI **New York, NY**

Quantitative Research, Vice President *2015-2017*

- CMBS and CRE loan-level default and loss severity model
    - Retrieve loan level performance data via Intex API, cleaned and manipulated the data
    - Built the model with Python
    - Implement the model in C++
- Pool Level Agency fixed rate prepayment model
    - Calibrated the model
    - Implemented an Excel prototype
    - Monthly model error tracking, modeling tuning (both in-house and Ad-co Model)
- Credit Risk Transfer Model
    - Built Loan level prepayment, default and loss severity model
- Mortgage rate model
    - Built current coupon model and primary secondary spread model
- Excel Cash flow model
    - Whole loan cash flow engine implementation for both residential and commercial mortgages

Citigroup **New York, NY**

Quantitative Developer, Vice President *2014-2015*

- Non-agency Model support
    - Cohort/Replines generation, monthly remittance data processing
    - Non-agency model performance monitoring and back-testing
- Agency prepayment model
    - Analytics library refactoring

Rangemark Financial Services **Greenwich, CT**

Quantitative Analyst, Vice President *2010-2013*

- Non-agency RMBS model prepayment and roll-rate default and loss severity modeling
    - Built loan level roll rate model in R
    - Implemented in C++ with Monte Carlo simulation
    - Improved C++ program with numerical optimization
    - Relative value analysis for non-agency securities within OAS framework

- Re-remic deal structure model
    - Built an Excel base model to perform tranche size optimization for re-remic structuring
- Agency MBS model
    - Portfolio risk monitoring with Blackrock Solution and Yield Book

SKILLS

- Programming: Python(Pandas), C++, SQL, R
- Software: eMBS, Loan Performance/CoreLogic, 1010Data, Intex, Bloomberg
- Big Data: Spark/Pyspark
- Third Party Models: Ad-co Loan Dynamics, Barclays Points, and Credit Suisse Locus

EDUCATION

Columbia University **New York, NY**
Master of Science, Computer Science October 2009
Michigan State University **East Lansing, MI**
Master of Science, Physics June 2007
University of Science and Technology of China (Special Class for Gifted Young) **China**
Bachelor of Science, Physics June 2004