LIFU LI

Engineer, CCB Fintech, China Construction Bank, Shanghai
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Education

B.Eng. at Department of Physics **East China Normal University**
Electronic Science and Technology *Sep.2015–Jul.2019*
Advisor: Prof. Min Xu. Shanghai, China.

Honors and Awards

2022 First prize of Shanghai Financial Innovation Award
(Group Award, For project on "Derivatives Pricing and Portfolio Management")
2021 Outstanding Employee at CCB Fintech(top 10%)
2019 Best graduate thesis Award in the class of 2015, Department of Physics
2018 National Scholarship(top 2%)
2017 Second Prize of Contemporary Undergraduate Mathematical Contest in Modeling in Shanghai Division

Experience

Research

Preparation of Conductive Hydrogels for Wearable Electronics
Undergraduate thesis project, 2018–2019, Advisor: Prof. Min Xu, Department of Physics

- Synthesized a series of conductive hydrogels with sodium alginate matrix, acrylamide, acrylic acid and potassium chloride
- Characterized the structure of these conductive hydrogels by means of Fourier Transform Infrared Spectroscopic, X-ray Diffraction and Scanning Electron Microscopy
- Assembled a data collection module by using ESP8266EX Wi-Fi MCU which is programmed with C++ on the Arduino IDE
- Developed a Python software involving Socket interface to exhibit the acquired data real-timely
- Combined the conductive hydrogel with the data collection module as a resistive wireless flexible sensor for motion sensing

Research on Two-dimensional Code Scanning and Recognition Based on Linear Array CCD
Undergraduate Research, 2017–2018, Advisor: Dr. Yaling Yin, Department of Physics

- Developed a two-dimensional code recognition software with linear array CCD camera SDK, C++ and Visual Basic
- Assembled the experimental platform by using parallel light source system, slide rails, linear array CCD camera and the homemade software
- Executed the experimental protocols, got the full image of a two-dimensional code and parse this code by the recognition software
  (**Similar products are sold for about $6,000 in the local market. This experiment was later selected as one of the optional experiments for undergraduates in the Department of Physics.**)

Employment

CCB Fintech, China Construction Bank **Jul. 2019 - Present**

Engineer, Department of Pricing and Quotation

Description: The Derivatives Model Pricing Platform includes Java apps and a C++ pricing engine. RabbitMQ manages message transmission. My responsibilities include constructing and maintaining the high availability and load-balanced RabbitMQ cluster. I also develop products related to interest and exchange rate, as well as optimize numerical models.

Accelerating Surface Fitting of Local Volatility Model using GPU Parallel Computing

*Team leader, current project**

- Install the corresponding CUDA version based on the GPU driver version, and configure the CUDA development environment
- Develop parallel versions of curve and surface fitting, matrix calculation, and host-device data transfer interface
- Analyze the code of the Local Volatility Model and extract the functionalities that can be placed in CUDA for parallel computing
- Using tiling and shared memory technology, the matrix calculation part of the surface fitting has been accelerated by about 3 times

Relocation and Optimization of Derivatives Model Pricing Platform

Team leader, Mar.2022 - Sep.2022

- Built a distributed RabbitMQ cluster and utilized Haproxy for load balancing management
- Ensured high system availability by using Keeplived to monitor the hosts' heartbeat
- Introduced Supervisor to further improve the high availability and load balancing of the RabbitMQ cluster
- Relocated application components and the pricing engine to new data center

Derivatives Pricing and Portfolio Management

Team member, Jan.2020 - Dec.2021

- Developed a spot-forward exchange rate calculator and parity forward calculator for Derivatives Model Pricing Platform based on the Vanilla Exchange Rate Option Pricing Model and Java's Factory Design Pattern
- Computed and produced reports on key interest rate risk analysis and profit and loss analysis
- Calculated interest rate quotes by using the Interest Rate Swap Model and utilized Java Spring multi-threading to publish the quotes on the customer platform

Publications

Lifu Li, Yuanting Qiu, Yaling Yin, Xiaoyun Li, Chunmei Wang, and Chaoxiu Guo*, "Experimental Research on Two-dimensional Code Scanning and Recognition Based on Linear Array CCD," *Physical Experiment of College*, 01,29-32,2019.(Simplified Chinese)

Skills and Languages

Skills: I often program using C/C++, CUDA and Java. I also have experiences in programming using Shell Script, Python, MATLAB and SQL.

Languages: English(TOEFL 97, GRE 319+3.0), Mandarin and Cantonese