Authoring Since 2018

Foreword

In 2018, my research was concentrated in **quantum computer**, especially superconducting quantum computer, but since 2019 I have taken a final decision to fix my research on **satellite broadband** Internet related **modulation and demodulation IC** technologies and design. This research orientation will be final.

Therefore in my future years my writing will be as follows:

- the writing of my mother's biography,
- the writing of my autobiography,
- and possibly one or two book(s) or papers in IC design for satellite Internet communications, particularly modulation and demodulation technologies.

Apart from these, I might also prepare for some business reports in the IC industry, particularly in the satellite internet industry, and possibly in other areas of businesses.

From time to time I might also write something important in our time.

And if I could be admitted into theological studies at a university or college or seminary, I would also plan to write one or two works in this direction.

And finally I need to maintain my two websites, one for satellite Internet, and the other is my private site. In addition to these I may maintain my presence on the web with my blogs, social media sites etc.

The above basically depicts all what I need to write in my late years. The crazy writing years of 2007-2017 is forever over.

ACADEMIC WRITING

IC Design and Verification

Hardware Verification

Review of Verification IP & IP Core Verification – An Abstract

Verification Methodologies-A Concise Introduction

000Hardware Verification for Analog and Mixed Signal.docx (new)

000Hardware Verification Planning - A Concise Introduction.docx (new)

Hardware Verification Tools

000Hardware Verification Planning Tools.docx (new)

000Hardware Verification Planning Tools.pdf

https://drive.google.com/
minghua.chen888@gmail.com
https://drive.google.com/file/d/1rOyMMHrYnQ-LdcI5KHTYgjFRHFR6wCkU/view?usp=sharing
https://drive.google.com/file/d/1rOyMMHrYnQ-LdcI5KHTYgjFRHFR6wCkU/view?usp=sharing
<iframe src="https://drive.google.com/file/d/1rOyMMHrYnQ-LdcI5KHTYgjFRHFR6wCkU/
preview" width="640" height="480" allow="autoplay"></iframe>

000AI ML Machine Learning for Hardware Design, Verification & Manufacturing.docx

000000ML Machine Learning for Analog and Mixed Signal Verification.docx

000AI ML Machine Learning for Hardware Verification.docx

Hardware Verification Language

Comprehensive Review of Hardware Verification Languages (Except Python)

Hardware Verification in Python

<iframe src=" /preview" width="840" height="680" allow="autoplay"></iframe>

Chapt. 01 Why Python
https://drive.google.com/file/d/1k73H7Xg4IyUuTkyIqKRtaZkvCsvV3-md/view?usp=share_link
https://drive.google.com/file/d/1k73H7Xg4IyUuTkyIqKRtaZkvCsvV3-md/view?usp=share_link

<iframe src=" https://drive.google.com/file/d/1k73H7Xg4IyUuTkyIqKRtaZkvCsvV3-md/preview" width="840" height="680" allow="autoplay"></iframe>

Chapt. 02 Pure Python

https://drive.google.com/file/d/1azQBe88n8mrGH1_PuoIG_h_sU3_O8ShA/view?usp=share_link

<iframe src="https://drive.google.com/file/d/1azQBe88n8mrGH1_PuoIG_h_sU3_O8ShA/preview" width="840" height="680" allow="autoplay"></iframe>

Chapt. 03 cocotb

https://drive.google.com/file/d/1qJSaZIBfSm2szrV0RtFLNSidSncjsEjy/view?usp=sharing

<iframe src="https://drive.google.com/file/d/1qJSaZIBfSm2szrV0RtFLNSidSncjsEjy/preview" width="840" height="680" allow="autoplay"></iframe>

Chapt. 11 MyHDL - Python Based Hardware Description And Verification Language

https://drive.google.com/file/d/1BvqOp9d2g6Mc5EBRNpuI9G6bo_xlDUe5/view?usp=share_link

<iframe src="https://drive.google.com/file/d/1BvqOp9d2g6Mc5EBRNpuI9G6bo_xlDUe5/preview" width="840" height="680" allow="autoplay"></iframe>

IP Core Protection

Protecting Your IP Cores – Part I Soft IP

IP Core Mathematics

Math for IP core and IC design and verification is a huge topic, and here below is a preliminary listing of possible areas of researches to be carried out over the next years: (updated Nov 25, 2022)

000000 VOLUME 16 IP Core Mathematics.docx

ARTIFICIAL INTELLIGENCE AI

0000Artificial Intelligence AI.docx

000artificial neural network.docx

000computer vision.docx

000ML_deep reinforcement learning.docx

000ML_DL deep learning.docx

000ML_Joint Learning.docx

000ML_Quantum Geometric Machine Learning.docx

000ML_RL Reinforcement Learning.docx

000ML_semi-supervised learning.docx

000ML_supervised learning.docx

000neural network.docx

000support-vector machines.docx

000weighted-majority voting.docx

Artificial Neural Network
Computer Vision
Expert Systems
Fuzzy Logic
Neural Network
Swarm Intelligence

Machine Learning

Active Learning
Bayesian Optimization
Deep Learning
Deep Reinforcement Learning
Joint Learning
Kernel Methods

Linear Regression
Logistic Regression
Quantum Geometric Machine Learning
Reinforcement Learning

Dyna-Style Reinforcement Learning
Prioritized Reinforcement Learning

Semi-Supervised Learning
Supervised Learning

BIG DATA

GRAPH COMBINATORICS OPTIMIZATION

HEURISTICS

Binary Decision Diagrams (BDD's).
Constraint Programming And Integer Programming
Coordinate Search
Genetic Search
Hooke-Jeeves
MADS - Mesh Adaptive Direct Search
Nelder-Mead Simplex
PSADE (global)
SAT solver
SMT solver
Successive Approximation Simplex

OTHERS

Benchmark Sets
Formal Methods

Formal Verification

Bounded Model-Checking (BMC)
Semantic Representations

Model Checking

Kripke Structures
Partitioned Transition Relations
Symbolic Model Checking
Temporal Logic Model Checking Algorithm

Probability

Monte Carlo Analysis

QUANTUM COMPUTER

Math (AI & Heuristics) for Quantum Algorithms

Math (AI & Heuristics) for Qubits

Coherent Transport
Correlated Qubit Errors
Decoupling
Design Of Logical Qubits
Quantum Error Correction
Quantum Interference
Quantum Spin Chains
Quantum Spin-1/2 Network
Quantum State Preparation
Qubit Allocation
qubit assignment
Qubit Coherence
Qubit Coherent Superposition
Qubit Coherent Transport
Qubit Control
Qubit Decoupling
Qubit Detection
Qubit Entanglement
Qubit Fidelity
Qubit Fine-Tuning
Qubit Layout
Qubit Mapping
Qubit Measurement
Qubit Movement
Qubit Placement
Qubit Readout
Qubit Routing
Qubit Scalability
Qubit Scheduling
Qubit Superposition
Teleported Operations

000Math (AI & Heuristics) for Qubit Allocation.docx
000Math (AI & Heuristics) for Qubit Mapping.docx
000Math (AI & Heuristics) for Qubit Measurement.docx
000Math (AI & Heuristics) for Qubit Placement.docx

000Math (AI & Heuristics) for Qubit Routing with AI ML RL
000Math (AI & Heuristics) for Qubit Routing.docx
000Math (AI & Heuristics) for Qubits.docx

Math (AI & Heuristics) for Quantum Gates

Math (AI & Heuristics) for Quantum Circuits

Quantum circuit layout

Math (AI & Heuristics) for quantum registers

Math (AI & Heuristics) for quantum processors

Math (AI & Heuristics) for Quantum Computer

Math (AI & Heuristics) for quantum compiler

Satellite Internet Modem Design

Modulator, Demodulator, Modem ICs for Satellite Internet Terminals - Ongoing

Ongoing

Modulator, Demodulator, Modem ICs for Satellite Internet Terminals.docx

This design involves a lot of relevant technologies, for example:

algorithms.docx

coding_error_correction.docx

CORDIC.docx

dac_adc.docx

decimators_interpolators.docx

design_methodologies.docx

filtering.docx

framing.docx

frequency_bands.docx

frequency_conversion.docx

interleaving.docx

local_oscillator.docx

mapping.docx

mode_adaptation.docx

modulations_demodulation.docx

phase_lock_loop.docx

scrambling.docx

standards_protocols.docx

stream_adaptation.docx

systems.docx

Quantum Computer (Stopped)

Quantum Computer in General (Stopped)

Following documents were being prepared:
quantum_intro

quantum_research_plan

quantum_studies_schedule

quantum_computer_writing_plan

quantum algebra

quantum_Turing_machine

quantum_algorithms

quantum_arithmetic

quantum_basics

quantum_chip

quantum_circuits

quantum_communication

quantum_complexity

quantum_computation

quantum_computer

quantum_computing

quantum_device

quantum_electronics

quantum_gates

quantum_general

quantum_informatics

quantum_information

quantum_logic

quantum_mechanics

quantum_network

quantum_optics

quantum_physics

quantum_probability

quantum_processor

quantum_programming

quantum_qubits

quantum_register

quantum_researchers

quantum_switching

quantum_technologies

quantum_theory

quantum_wires

graph4quantum

Superconducting Qumputer (Stopped)

Stopped

ResearchWritingProject4SuperconductingQumputer_Letter_DE.docx
ResearchWritingProject4SuperconductingQumputer_Letter_EN.docx
ResearchWritingProject4SuperconductingQumputer_Letter_FR.docx
ResearchWritingProject4SuperconductingQumputer_Plan_DE.docx
ResearchWritingProject4SuperconductingQumputer_Plan_DE.pdf
ResearchWritingProject4SuperconductingQumputer_Plan_EN.docx
ResearchWritingProject4SuperconductingQumputer_Plan_EN.pdf
ResearchWritingProject4SuperconductingQumputer_Plan_FR.docx
ResearchWritingProject4SuperconductingQumputer_Plan_FR.pdf

SuperconductingQumputer19People.docx

SuperconductingQumputer01Definitions.docx

SuperconductingQumputer02Theories.docx

SuperconductingQumputer03AlgorithmsApplications.docx

SuperconductingQumputer04Types.docx

SuperconductingQumputer05ArchitectureStructures.docx

SuperconductingQumputer06Materials.docx

SuperconductingQumputer07Designs.docx

SuperconductingQumputer08Features.docx

SuperconductingQumputer09Manufacturing.docx

SuperconductingQumputer10MeasurementControl.docx

SuperconductingQumputer11CalibrationCharacterization.docx

SuperconductingQumputer12Tests.docx

SuperconductingQumputer13Operations.docx

SuperconductingQumputer13OperationsCoherence.docx

SuperconductingQumputer13OperationsDecoherence.docx

SuperconductingQumputer13OperationsEntanglement.docx

SuperconductingQumputer13OperationsErrorCorrection.docx

SuperconductingQumputer13OperationsFaultTolerance.docx

SuperconductingQumputer13OperationsInterference.docx

SuperconductingQumputer13OperationsSuperposition.docx

SuperconductingQumputer13OperationsTeleportation.docx

SuperconductingQumputer14QuantumGates.docx

SuperconductingQumputer15QuantumCircuits.docx

SuperconductingQumputer16QuantumComputer.docx

SuperconductingQumputer17Software.docx

SuperconductingQumputer18Breakthroughs.docx

SuperconductingQumputer20Organizations.docx

SuperconductingQumputer22Literature.docx

Graph Theory (Stopped)

Hypergraph partition pp210

Hypergraph modeling of circuits - general, pp40

APPLICATION WRITING

Software reverse engineering (Stopped)
pp350

Network security technologies (Stopped)
pp80

BUSINESS WRITING

China Satellite Broadband MONTHLY REPORT, presentation, pp50
China IC MONTHLY REPORT, A Brief Introduction, pp50

OTHERS

Mother's biography – suspended
Autobiography – suspended

WEBSITES

http://www.plutuse.com/ obsolete
http://www.angelia.space/ obsolete