

PERSONAL RESUME

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Location: Abu Dhabi, UAE



Introduction

Systems engineer and data scientist with 10+ years of experience building infrastructure from scratch — from national-scale AI platforms to Linux kernel contributions. Currently pivoting toward cryptographic engineering, with a focus on hardware random number generation. Independent researcher; author of a preprint on LLM input-quality frameworks (June 2026). Seeking a PhD position where statistical rigor meets hardware design.



Core Competencies

- Systems & Infrastructure: Kubernetes, Terraform, CI/CD pipelines, Linux system administration, performance monitoring
- Programming Languages: Python, R, Rust, Ruby, C, Shell scripting
- Data Science & Statistics: Hypothesis testing, confidence interval analysis, probability theory, probabilistic modeling, data visualization
- AI/ML Research: LangChain, LangGraph, PyTorch, HuggingFace, ChromaDB, OpenAI API, Anthropic MCP protocol
- Currently Learning: VHDL, digital system design, abstract algebra, number theory



Career

Dec 2021 - Present

Core42

DevOps Engineer | Cloud Platform and Artificial Intelligence

- Primary infrastructure engineer for a UAE national AI platform. Independently designed, deployed, and maintained the full infrastructure layer — from initial architecture (zero state) through to profitable production operations. Built Kubernetes orchestration, CI/CD automation, and serverless monitoring workflows serving LLM-powered applications at national scale.

Oct 2020 - Nov 2021

HSBC (Outsourcing)

Data Operations Engineer | Finance

- Automated data processing and analysis tasks using Jenkins pipelines
- Implemented real-time data monitoring with InfluxDB and Grafana, enhancing problem response

Mar 2019 - Jul 2020

NR-ESC

Data Specialist | Semiconductor

- Data Specialist in semiconductor manufacturing. Applied statistical analysis to optimize production workflows and inventory forecasting. First exposure to the hardware supply chain — an experience

that shaped my later interest in hardware-level security.



Research

Jun 2026

LLM Visibility: A Research Framework

Independent Research

- Formulated "visibility" as a first-order LLM safety concept
- Authored position paper: "Visibility as the First Line of Defense"
- Currently extending the work toward empirical validation on agentic benchmarks.

May – Jun 2026

Tatty: Multi-Agent Personal Assistant

Capstone, CMU Emeritus

- Designed 6-layer agent architecture: ReAct + RAG + ToT + Multi-Agent + Guardrails
- Implemented with LangGraph, ChromaDB, all-MiniLM-L6-v2
- All 6 capstone checkpoints evaluated as Complete
- GitHub: <https://github.com/donghao1393/tatty>

May – Jul 2021

SM3 Cryptographic Hash Implementation

Independent Project

- Implemented the SM3 cryptographic hash algorithm (Chinese National Standard GB/T 32905-2016) in Rust, working directly from the standards document — translating pseudocode specifications into production-quality systems code
- Applied performance optimization techniques to achieve leading throughput among open-source SM3 implementations at the time
- Demonstrated the ability to independently read, interpret, and implement cryptographic specifications – a workflow directly transferable to hardware implementation of NIST-standardized algorithms



Education

- Emeritus, Agentic AI Program: Building Autonomous Systems for Real-World Applications | Carnegie Mellon University | May – Jul 2026
- Master of Science (Distinction), Data Science | University of Birmingham | Sep 2022 – Nov 2024
 - Thesis: Social Media User Sentiment Analysis Using Large Language Models (GPA: 4.00/4.0)
- Bachelor of Economics | Beihang University | Mar 2013 – Jul 2015
- Diploma, Graphic Image Design (Digital Film Production) | Peking University Founder Technology College | Sep 2007 – July 2010



Achievements

- Linux Kernel Contributor
- Machine Learning Certification by Stanford University