NICK FARROW

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github portfolio

EMPLOYMENT

Financial Engineering Contractor

Co-designed and built an extremely robust algorithmic derivatives platform. Details available upon request.

Split Labs - Bitcoin & Cryptography Software Engineer

Implemented cryptographic schemes following academic research, collaboratively engineered Flexible Round Optimised Schnorr Threshold (FROST) multisignatures¹ in the secp256kfun library.

State of the art cryptographic protocols which distribute trust and custody, as well as allow for asynchronous cooperation in group settings with a decreased reliance on other parties.

Contributions to cryptography library secp256kfun, blind signatures and other privacy tools. Other open source contributions ongoing. Engineering of gun, a command-line Bitcoin wallet written in the Rust programming language.

See it all here: git.nickfarrow.com

Market Maker

Built and operated market making software within a small team, integrating many cryptocurrency exchanges, hundreds of pairs, and a variety of data feeds. Implemented risk and status metrics to triggered notification alerts. Experience building backtesting frameworks to process and train with historical data; within liquid markets and also with experimental trade research within exotic markets. Built order execution strategies.

Deloitte Graduate - Analytics & Automation Consultant

Implementation of robotic process automation, and database feature analytics for internal record management within the telecommunications industry. Version control and test-production environment management.

ResearchFirst Project

Monash University School of Physics & Astronomy Scholarship Project Research on The mass distribution of Galactic double neutron stars, published 2019.

Ski Instructor

Falls Creek Snowsports School	2013 - 2019 part time
Niseko International Snowsports School (Japan)	2015/2016 season
Private Academic Tutoring	

Physics for	Graduate Medical	School Admissions	Test (GAMSA	Γ)
Year 10 &	12 Mathematics			

¹You can think of FROST multisignatures like a joint bank account which in order to spend from needs some threshold t of n parties to individually sign. These signatures are then combined into a single signature which is valid under the joint public key or "bank account".

2023 Feb

2021-

2021

Dec 2017 - Jan 2019

2020-2021

2019 2016-

FIELDS

Computation - Engineer and analyst. Excelling in system design, scientific experimentation, and simulation. Seasoned in Rust, Python, C, PHP, Git, JavaScript, Solidity, HTML, CSS, FORTRAN, LATEX, shell, and learning others regularly. Expert problem solving with awareness of appropriate tools. Comfortable working in production, and reliable under pressure. See portfolio: git.nickfarrow.com

Bitcoin - Extensive knowledge of Bitcoin and other cryptocurrency protocols, cryptography, markets, and security. Development of payment gateways with SatSale, on-chain and Lightning. Direct experience with a range of cutting edge Bitcoin software. Currently working with command-line based wallets, including the designing and adaptation of cryptographic protocols.

Software Architecture - Built **SatSale** as free open source software - managing, reviewing and guiding contributions from others. Previously built fault tolerant software in crucial settings such as proprietary market making algorithms for clients. Frequently use data scraping (web), menial task automation, and probability heuristic tools. Business focus of shipping features to users with simplicity and modularity.

Algorithms & Market Making - Algorithmic trading and on-chain research within cryptocurrency markets. Natural applying concepts of probability, uncertainty, risk, arbitrage. Familiarity with strategies and instruments such as futures, perpetuals, options, pools, defi, on a fundamental mathematical basis. Experienced market maker and operations engineer, practiced in creating backtesting frameworks from scratch.

Mathematics & Physics - Implementation of cutting edge academic research in fields of physics, cryptography, financial mathematics, and statistics. Mathematics applied directly, or indirectly through analytical, logical & problem solving strategies.

Linux & Distributed Computing - Proficient in networking, system maintenance, customisation and operations. Modular and interoperable system design. Parallel computing of Laser Interferometer Gravitational-Wave Observatory (LIGO) data, with HTCondor (2017-2019). API design and engineering.

Presentation - Trained in public speaking and debating, passionate for presentation opportunities. Recently Cryptography & SatSale presentations at conferences with infamous live demos. Previously have presented to online teleconferences in LIGO working groups, as well as physics talks for varying audiences. Enthusiastic in teaching and sharing passions, ideas, projects.

PUBLICATIONS

Nicholas Farrow, Xing-Jiang Zhu, and Eric Thrane, *The Mass Distribution of Galactic Double Neutron Stars*, The Astrophysical Journal 876.1. arXiv:1902.03300 2019 Isobel M Romero-Shaw, Nicholas Farrow, Simon Stevenson, Eric Thrane, and Xing-Jiang Zhu, *On the Origin of GW190425*, Monthly Notices of the Royal Astronomical Society: Letters, Volume 496, Issue 1. arXiv:2001.06492 2020

EDUCATION

Bachelor of Science - Advanced Research, Monash University	2016-2019
Honours in Physics (HIIA). Majors in Physics and Mathematics.	2019
GPA=3.5, WAM=79.24	
ResearchFirst Project Scholarship	2017
Blue Prism Accredited Developer	2020
Australian Professional Snowsports Instructors Level 1	2013