Andrew Xu

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EDUCATION

UCLA ANDERSON SCHOOL OF MANAGEMENT — Los Angeles, CA
Master of Financial Engineering — GRE: 333 — Expected Dec 2027

NYU TANDON SCHOOL OF ENGINEERING — New York, NY
B.S. in Computer Science, Minor in Mathematics — GPA: 3.523 — May 2025

- *Relevant Courses:* Linear Algebra, Multivariable Calculus, Blockchain and Distributed Ledgers, Machine Learning

SKILLS

- *Technical Skills:* Python, C++, C#, CUDA, PyTorch, Solidity, MATLAB, SQL, MongoDB, scikit-learn, VBA

EXPERIENCE

PRIMETALS TECHNOLOGIES — Sutton, MA
Global industrial technology company producing automated machinery for the metals industry. — Apr 2024 - Present
Software Engineer Contractor

- Built a Python/MATLAB data replay tool at 20x real time and moved testing from monthly live-mill access to on demand.
- Reconstructed deterministic event order across up to 6 multiplexed streams with stable tie-breaking and pipe backpressure.
- Fit 13 piecewise linear segments across 14 calibration points in fixed-point integer math, linearizing analog inductive position sensors across a C#/.NET desktop app and Arduino C++ firmware for up to 8% better accuracy than one global slope.
- Modernizing a C# calibration app from .NET Framework to .NET 10 under a 22-check parity suite catching 7 planted defects.

SPATIAL SURGICAL — Worcester, MA
Medical technology startup developing spatially aware, computer-assisted surgical instruments. — Jun 2025
Software Engineer Intern

- Prototyped a three-state treatment button that drives threaded I2C LED blinks and UART commands on a Linux laser SBC.
- Migrated Python I2C control from deprecated smbus to smbus2, measuring under 150 ms added latency across 1,000 reads.
- Mapped AVR32 hardware interfaces to PIC equivalents and configured clocks, pins, and project settings for a firmware port.

PRIMETALS TECHNOLOGIES — Sutton, MA
Software Engineer Intern — Jun 2023 - Aug 2023

- Reduced workbook preparation from 4 hours to under 30 seconds through Excel VBA worksheet data automation.
- Developed configurable routines to transform mill data, assign guide settings, standardize labels, and calculate groove depths.
- Troubleshot and documented a MATLAB optical alignment system rehosted on a new Windows 11 single-board computer.

PROJECTS

DeepLOB Paper Reproduction | *Python, PyTorch, CUDA, NumPy, pytest* — Jul 2026 - Sep 2026

- Reproduced DeepLOB, a short term limit-order-book price movement model, at 83.35% mean weighted F1 in an independent PyTorch implementation, within 0.05 percentage points of the published 83.40% across 3 fixed seeds.
- Engineered a leakage-safe FI-2010 pipeline that converted 394K observations into 251K training and 138K test windows, lazily built as 100 x 40 tensors, with none crossing stock, day, fold, or split boundaries, recovered from unlabeled source files.
- Measured a 61K parameter CNN-Inception-LSTM network at ≤2 ms model-only batch-1 latency and ≥5K batched windows/s.
- Executed reproducible, deterministic CUDA experiments with CPU/MPS checks, logging configs, checkpoints, and metrics.

Financial Fraud Detection Model | *Python, scikit-learn, TensorFlow, pandas, NumPy* — Feb 2025 - May 2025

- Analyzed 6.36M PaySim transactions across 11 raw fields in a team of 2, with 8,213 fraud cases at a 774:1 class imbalance.
- Benchmarked 6 neural network configurations, 11 logistic solver/penalty settings, 3 SVM kernels, and 6 polynomial degrees.
- Evaluated models on a 1.59M-row test partition at natural 0.13% fraud prevalence after undersampling for balanced training.
- Selected a linear SVM at C = 10 for 99.61% fraud recall at 1.58% precision, accepting review cost to minimize missed fraud.

ADDITIONAL INFORMATION

- *Game of Go:* 5 dan | volunteer Go instructor, MassBCLS (2019 - 2021)
- *Clubs:* NYU Blockchain & Fintech Club - Development Team (2022 - 2024)
- *Languages:* Chinese (Native)
- *Interests:* Blockchain technology, mechanical keyboards