RAJDEEP BANDOPADHYAY

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EDUCATION

UNIVERSITY OF CINCINNATI — B.S. IN COMPUTER SCIENCE, SPRING 2023, MATHS MINOR [GPA 3.726]

MASSACHUSETTS INSTITUTE OF TECHNOLOGY — MICRO-MASTERS IN MATHEMATICAL MODELING

RELATED ACHIEVEMENTS:

- University of Cincinnati: Dean's List and Global Scholarship of 80%
- Painting: Diploma [Ranked 3rd in State; 99th Percentile]
- National Merit Search Exam: Ranked in top 100 [98th Percentile Nationally]

EXPERIENCE

QUANTITATIVE RESEARCHER/ENGINEER [COOP], KERSHNER TRADING GROUP, CHICAGO IL | [MAY-JULY 2022]

- Developed and implemented Low Latency Systems (C++ & Cython) for CloudQuant division's internal projects.
- Researched and Designed profitable models (Highly Liquid US Equities, using TAQ Data) and licensed to multiple Portfolio Managers.
  - Related Technologies / Abstractions:
    - Volume / Transaction (Tick-Trade) classification algorithms such as LR, CLNV, BVC, EMO, FL, BJZZ etc.
    - Feature Engineering for time series data with Geo-Physical Metrics for superior modelablity/utility.
    - Ensemble Machine Learning (multi-layer) model optimization with Optuna.

FIRMWARE ENGINEER [COOP], INFINERA, SUNNYVALE CA | [JANUARY - MARCH 2022]

- Developed and implemented debugging toolkit for in-field release (stripped) binaries
  - Engineered master MAKEFILE for consistent memory maps across symboled and stripped binaries.
  - Revamped pre-existing algorithm for dependency pruning.
- Redesigned critical sections throughout the whole project to reduce binary size for faster over-the-air upgrades.

FIRMWARE ENGINEER [COOP], INFINERA, SUNNYVALE CA | [JANUARY - APRIL 2021]

- Developed and implemented Jenkins Pipelines for regression and sanity-scanning.
- Designed, debugged and deployed developer-tools related to process, threads, Jenkins and Yang data model.
- Redesigned, debugged and streamlined MAKEFILE using automated topological sort based dependencies scanning and restructuring - resulted in faster compiling times (over 25%).

FIRMWARE ENGINEER [COOP], INFINERA, SUNNYVALE CA | [APRIL - JULY 2020]

- Designed and implemented data reporting modules for Performance Monitors (Line Side power balancing).
- Revamped Upgrade Manager to filter out only needed components to reduce upgrade time.
- Mitigated issues/bugs related to misreporting and delays by restructuring IPC modules.

FIRMWARE ENGINEER [COOP], INFINERA, SUNNYVALE CA | [SEPTEMBER - DECEMBER 2019]

- Designed and rolled out a NETCONF application interface (plugin) to perform performance tests on multiple YANG models.
- Designed ECDSA encryption module for secure file management during upgrade boot process.
- Designed and implemented library modules for FPGA Processing Subsystems side to be utilized by other firmware projects.

RESEARCH ASSISTANT, UNIVERSITY OF CINCINNATI, [OCTOBER 2019- PRESENT]

- Designed GUI with C++ frameworks providing an interface for the driver to record data collected for detecting shoulder drop-off on any given GPS location while the car driving at an average of 50 MPH.
- Authored IPC framework modules and custom driver modules for LIDAR, GPS, and Camera in C/C++.
- Conducted Studies and wrote and edited materials for publication and presentation.

SKILLS

- C,C++, PYTHON/CYTHON, BASH, RUST, YANG, MAKEFILE, GIT, C++ GUI SYSTEMS, MACHINE LEARNING & A.I.
- INDUSTRY KNOWLEDGE: QUANTITIVE ANALYSIS, LOW-LATENCY C++ SYSTEMS, HIGH PERFORMANCE SYSTEMS, FPGA (PROCESSING SUBSYSTEMS & VERILOG), MATHEMATICAL MODELING, STOCHASTIC SIGNAL DISCOVERY, FEATURE ENGINEERING, DATA ANALYSIS, FINANCIAL MARKETS
- LANGUAGES: ENGLISH, BENGALI, HINDI, SANSKRIT