

Jishnu Sen

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WORK EXPERIENCE

Citadel Securities

Summer 2023

Software Engineer Intern (Options Market Making)

- Designed and developed new stream processing pipeline in Q to process high frequency market data with low latency
- Developed scheduling and optimization system for new and existing application placements in large-scale datacenter

NanoCAD Laboratory

Academic Year 2022-2023

Undergraduate Researcher

UCLA, CA

- Designed low latency tracking object detection and tracking pipeline utilizing Gabor filters for event-based cameras
- Worked with PhD students to design ASIC coprocessor with stochastic computing to accelerate filter convolution
- Developed software implementation of pipeline with GPU-accelerated filter convolution layer using Nvidia CUDA
- Coauthored paper submitted (under review) to IEEE/ACM International Symposium on Microarchitecture (MICRO-56)

Citadel Securities

Summer 2022

Software Engineer Intern (Options Market Making)

New York, NY

- Designed and developed distributed systems software leveraging thread-level parallelism in C++, with robust unit tests using GoogleTest and gMock to ensure reliability prior to deployment.
- Designed algorithm to efficiently query and cache SQL database results for future usage.
- Utilized pub/sub messaging system with message serialization via Microsoft Bond for inter-process communication.
- Worked with traders and quantitative researchers to deliver software to production and iterate functionality.

SpaceX

Summer 2021

Satellite Software Engineer Intern (Starshield R&D)

Hawthorne, CA

- Developed controls and wireless networking software with comprehensive unit tests on safety-critical embedded RTOS Linux nodes deployed on production satellites using Bazel, C++, Python, and custom CI/CD.
- Worked with hardware team to design and develop drivers to detect faults in network communications with FPGA.
- Redesigned, implemented, and tested failure zone avoidance algorithm to antenna gimbal controls.
- Engineered state machine to attenuate signal and escalate shutdown of RF chains in case of critical failure.

NovaSource Power Services

June 2020 – June 2021

Full Stack and Embedded Software Developer

Davis, CA

- Developed full MEAN stack asset tracking system including a web visualizer and database analytics processing server.
- Implemented IoT LTE transmitter code (C), for tracking robot performance, and analytics on employee performance.
- Led team of 3 interns to deliver and maintain embedded robotics software to production worldwide.

SunPower Corporation

Summer 2019

Software Intern

Davis, CA

- Optimized robot microcontroller embedded software in C++ to provide double digit improvements in performance.

Laboratory for Embedded Programmable Systems

Summer 2018

Software Intern

UC Davis, CA

- Designed and developed iOS app using Swift and UIKit to interface with embedded device using Bluetooth Low Energy with custom data encoding for storage of instrument data in Google Cloud and in-app visualization.

Amorphous Materials Research Group

Summers 2017 - 2020

Software Intern

UC Davis, CA

- Designed and developed Python web application using Flask for NMR spectral lineshape simulation
- Published in the *Journal of Chemical Physics*: DOI: 10.1063/1.5141004 and in *Science*: DOI: 10.1126/science.aaz0251

EDUCATION AND EXTRACURRICULARS

University of California, Los Angeles

Expected June 2024

BS, Computer Science

Los Angeles, CA

- Dean's Honors; 3.9/4.0 GPA
- Selected Coursework: Deep Learning, Machine Learning, Networking, Processor Architecture, Operating Systems
- Planned Coursework: Large Scale Machine Learning, Parallel and Distributed Computing
- Lifetime member of Upsilon Pi Epsilon, International Honor Society for the Computing and Information Disciplines

Davis Senior High School

June 2020

- Software lead on World Championship winning FIRST Robotics Competition (FRC) Team 1678
- National Honor Society (NHS) Lifetime Member, California Scholarship Federation (CSF) lifetime member

SKILLS

C/C++, Java, Python, Javascript, Angular, POSIX, Bazel, Linux, MongoDB, Azure, Node.js, Microsoft Bond, PyTorch