Jishnu Sen

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WORK EXPERIENCE

Citadel Securities **Summer 2022**
Software Engineer Intern *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 determine feature and user experience requirements.

SpaceX **Summer 2021**
Satellite Software Engineer Intern *Hawthorne, CA*
- Worked on controls and networking software with comprehensive unit tests on safety-critical embedded Linux nodes deployed on satellites using Bazel, C++, Python, and custom CI/CD.
- Designed and developed software alerts system to detect faults in network communications with FPGA.
- Refined embedded antenna gimbal controls firmware in by adding keepout zone avoidance algorithm.
- Developed 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 group of 4 interns to maintain, validate, and test robot microcontroller firmware (C, PIDF control loops) for solar panel cleaning robots deployed in several countries and 20+ sites in the US.

SunPower Corporation **Summer 2019**
Software Intern *Davis, CA*
- Optimized robot microcontroller firmware in C++ to provide double digit improvements in performance.
- Redesigned LCD UI software for easier use by operators by simplifying menus and UX.
- Tested and validated firmware and operation of solar panel cleaning robots using custom CI/CD pipeline.

Laboratory for Embedded Programmable Systems **Summer 2018**
Software Intern *UC Davis, CA*
- Designed and developed iOS app using Swift and UIKit to interface with “Non-Invasive Bladder Volume Analysis” (NIBVA) device using Bluetooth Low Energy for storage of instrument data in Google Cloud and in-app visualization.
- Worked with EE researchers to design encoding scheme to transmit information from embedded devices over BLE.

Amorphous Materials Research Group **Summers 2017 - 2020**
Software Intern *UC Davis, CA*
- Designed and developed GUI user friendly Python implementation of NMR spectral lineshape simulation, and creation of a web portal using Flask for easy use, access, and dissemination of results.
- Worked with researchers to build a specification to efficiently engineer my simulation software to their needs.
- 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; 3.88/4.0 GPA
- Relevant Coursework: Computer Organization, Algorithms and Data Structures, Discrete Math, Linear Algebra

Jane Street SEE Trading Program **Spring 2021**
- Educational program on market making principles and probability

Davis Senior High School **June 2020**
- Software lead on FIRST Robotics Competition (FRC) Team 1678, National Honor Society Lifetime Member

SKILLS

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