

Frank Wang

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EDUCATION:

Northwestern University, Evanston, IL

Expected June 2024

B.S. in Computer Science and B.Mus. in Violin Performance (*Dual Degree*)

Minor in Entrepreneurship | GPA: 3.82/4.00 CS Major GPA: 4.00/4.00

The Juilliard School: Pre-College, New York City, NY

September 2015 – June 2020

Violin Performance

RELEVANT EXPERIENCE:

Nokia

Naperville, IL

Software Development Intern

06/2022 – 06/2022

- Created 15+ Python keywords (functions) for 5G User Equipment Load Balancing infrastructure development and stress test automation in a multi-lab environment using Robot Framework and Jenkins, reducing test execution time from 4 hours to 45 min
- Debugged existing code and integrated new keywords into the existing automated System Stress Testing test suite in Robot
- Extracted and manipulated data from log files to generate plots using AWK and Matplotlib, allowing for visual memory leak detection and monitoring of key performance indicators
- Built overload control testing automation software for traffic throttling detection, determining the duration, type, and subtype of CPU overload between requested time intervals

Design Thinking and Communication Projects

Northwestern University, Evanston, IL

Clients: Occupational Therapists at Shirley Ryan AbilityLab

01/2022 – 06/2022

- Ideated 20+ mockups and prototyped 2 grasping aid devices for assisting hemiplegic stroke survivors
- Effectively conducted research and communicated ideas through design reviews, reports, client meetings, and presentations, and as product manager, successfully coordinated two 4-person teams through the design process
- Received the best communication award out of 60+ Northwestern engineering teams

Visual Media REU

Arizona State University, Tempe, AZ

Computer Vision Researcher Intern

06/2021 – 08/2021

- Designed and implemented Python code using OpenCV for development of a Digitally Augmented Violin for salient feature tracking of violin playing, funded by the *National Science Foundation*
- Introduced a new hardware system consisting of a 3-D printed violin scroll/camera mount for video recording/tracking
- Performed SIFT feature tracking of the violin bow tip using an OpenMV Cam H7, OpenCV, NumPy, Matplotlib, and the OpenMV IDE, ultimately calculating pixel velocity of the bow movement from sample videos of my own violin playing
- Wrote a research [paper](#) and [abstract](#) for conference submissions, accepted and presented at NCUR 2022

CyberPatriot Club

Sharon, MA

President, Founder

09/2018 – 06/2020

- Led a 5-person team in CyberPatriot competition, leading to 1st place Platinum Tier MA State Award (2020), 2nd place Gold Tier MA State Award (2019), and 4th place Gold Tier National Award (2019) out of 6000+ teams nationwide
- Fixed vulnerabilities (backdoors, firewall security, local policies, etc.) in Debian, Ubuntu, and Windows virtual machines

PROJECTS:

Predicting Parking Occupancy for Naperville, IL | AI/ML, Python, Matplotlib, Jupyter Notebook, Excel

07/2022

- Applied ARIMA/SARIMA models using time series analysis to predict parking occupancy for Naperville's new parking garage
- Identified and eliminated noisy data from Excel datasets to summarize existing downtown parking and parking trends

Photo App | Python, JavaScript, HTML, CSS, React, Git

03/2022 – 05/2022

- Developed an Instagram-like app using HTML/CSS/JavaScript that allows users to interact with posts (like, comment, bookmark)
- Created REST APIs and utilized SQLAlchemy for managing username, photo, and comment databases

Checkers | C++, GNU Nano

05/2021

- Programmed a fully playable checkers-like game in C++ using the GE211 game engine

SKILLS:

Programming Languages: Python, Java, C/C++, HTML/CSS/JavaScript, SQL, MATLAB, x86-64 Assembly

Frameworks and Libraries: React, Flask, Robot Framework, OpenCV, TensorFlow, NumPy, Matplotlib

Tools and Technologies: Git, Jenkins, Heroku, DBG, Windows and Linux OS, Cisco Packet Tracer