Grace Shum

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Education

Northwestern University **Expected Jun. 2027**
Bachelor of Arts in Computer Science, Minor in Business Institutions *Evanston, IL*

- **Cumulative GPA:** 3.85/4.00 | **Dean's List:** 4/4
- **Relevant Coursework:** Data Structures & Algorithms, Computer Systems, Intro to Python, Intro to C/C++, Intro to Java, Scalable Software Architectures, Computer Game Development, Linear Algebra, Probability & Statistics, Multivariable Calculus, Discrete Math

Experience

Cleveland Clinic **Jun. 2024 – Sep. 2024**
Data Science and Finance Analyst Intern *Cleveland, OH*

- Utilized **SAS**, **Teradata**, and **SQL** to build data queries investigating patient categories and clinic encounter data, classifying patients likely to pay bills on time for a predictive model; created visual analyses using **Tableau** and **Excel**
- Redesigned and refactored the data science team website with **HTML**, **CSS**, and **JavaScript**, optimizing the integration of Tableau dashboards and analytics, while enhancing UI/UX and centralizing resources for improved accessibility.
- Coordinated preparation and delivery of weekly progress reports, managed project workflow, and led report-outs to finance department heads and interns, enhancing team efficiency in project execution and cross-division collaboration

Prelude Planner **Jun. 2024 – Sep. 2024**
Full-Stack Software Engineer, Assistant Project Manager *Chicago, IL*

- Spearheaded development of a studio assistant app for Northwestern's Bienen School of Music to enhance scheduling efficiency by 44% with greedy graph coloring using **Python** scripts for backend data processing and **API** integrations
- Collaboratively built app with **React Native** and **JavaScript**. Independently developed calendar and lesson availability sections. Led a team of four by forecasting project timelines, driving efficient workflows, and fostering cohesive teamwork
- Administered real-time scheduling updates using **Socket.IO**, optimized a robust backend for scalability with **Node.js** and **Express**, and centralized music lesson resources by implementing robust data storage solutions with **MongoDB**

Case Western Reserve University Computer Integrated Surgery Lab **Jun. 2022 – Aug. 2022**
Electrical, Computer, and Systems Engineering Department Research Assistant *Cleveland, OH*

- Leveraged **Kubios HRV** analysis software, **Pandas**, and human-machine interfaces to perform in-depth analysis of cognitive load and heart rate variability data to identify the connection between cardiovascular and emotional health
- Conducted experiments to explore the correlation between cognitive load and heart rate variability, using **SciPy** for statistical analysis and **Matplotlib** for data visualization, improving regression models to increase accuracy by 37%
- Produced comprehensive lab reports and presentations on findings, contributing to a deeper understanding of the impact of cognitive load on cardiovascular health and supporting ongoing lab research initiatives related to medical robotics

Projects

Books and Breakfast App **Jan. 2024 – Jun. 2024**

- Streamlined volunteer onboarding of an education non-profit by centralizing information, rideshare matching, and chat functionality on a mobile app, boosting new volunteer retention by 63% and improving organizational coordination
- Collaboratively planned and built **React Native TypeScript** app using **Figma** for mockups and **Expo Go** for testing. Elevated app performance by incorporating **Firebase** to store data securely, speed up retrieval, and reduce server load

Personal Website **Jun. 2024 – Jul. 2024**

- Developed a personal website featuring a navigation bar, homepage, about me and portfolio section, and footer, incorporating advanced animations and interactive elements using **React** and **JavaScript** for logic and **CSS** for styling
- Implemented media queries and custom CSS styling to optimize the website's display and responsiveness for smaller laptop screens and mobile devices, ensuring a seamless and user-friendly experience across various screen sizes

Additional

Languages: Python, C++, C, C#, JavaScript, TypeScript, Java, SQL, HTML5, CSS, Racket
Frameworks/Libraries: React, React Native, Node.js, Socket.IO, Express, Pandas, SciPy, Matplotlib
Infrastructure: Teradata, Tableau, SAS, MongoDB, Firebase Realtime Database, Git, Unity, AWS Cloud Computing
Certifications: Girls Who Code – JavaScript & HTML & CSS Accreditation
Organizations: Design + Innovate for Social Change, NTech, Northwestern AI Club, Illustrators & Animators Club