Nicholas Cheddar

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Education

University of Pittsburgh Pittsburgh, PA
Majoring in Computer Science *Aug. 2023 – April. 2027*

Summary

Enthusiastic Computer Science student at the University of Pittsburgh with experience in software development, UI/UX design, and game programming. Skilled in Java, Python, and C++, with strong interests in web development, machine learning, and creative projects such as game design and digital media.

Work Experience

Software Research App Developer(TechToolKit) June 2025-Present
University of Pittsburgh *Pittsburgh, PA*

- Assisted in software research and development, contributing to user-centered design improvements.
  $Developedandimprovedthe GUI to enhance usability and user-friendly experience.$
- Conducted usability testing and gathered feedback to refine interface elements and functionality.

Projects

Personal Portfolio Website - | *HTML,CSS,Javascript* August 2025 – Present

- Developed responsive portfolio website using HTML5, CSS3, and vanilla JavaScript
- Implemented dynamic typewriter animation effect cycling through professional roles
- Utilized CSS Grid and Flexbox for responsive layout across multiple screen sizes
- Created modern UI with gradient backgrounds, custom animations, and mobile-responsive design

Starship Nebula(Beta): Game Development - | *Unity C Programming* July 2025 – Present

- Designed and implemented a character progression system with per-character ascension tracking
- Built a dynamic UI popup system with smooth animations and singleton pattern architecture
- Integrated save/load functionality using ES3 serialization for persistent player progress

Color Quantization System l | *Java* | *Image Processing* March 2025 – April 2025

- Built a color quantization system to reduce colors in bitmap images using two approaches
- **K-Means Clustering**: Implemented Lloyd's algorithm with farthest-first initialization for optimal color palette generation
- **Uniform Bucketing**: Divided 24-bit RGB color space into evenly distributed segments for systematic color reduction
- **Distance Metrics**: Developed Squared Euclidean and Circular Hue metrics for flexible color similarity calculations
- **Modular Design**: Used interface-based architecture for extensible algorithm implementation with complete BMP file I/O

Coursework

- **Completed**: Data Structures and Algorithms I and II, Computer Organization and Assembly, Mathematical Foundations in Machine Learning, Discrete Structures
- **In progress**: Web Development, Software Engineering, Introduction to Systems Software, Principles of Game Design and Implementation

Technical Skills

Languages: Java, Python, MIPS Assembly, HTML, C++,Flutter, C sharp, C
Developer Tools: Git, VS Code, Visual Studio, Mars, Eclipse, Unity, Scratch
Libraries: pandas, Matplotlib
Skills: Web Development, Game development, graphic design, video editing, game modding

Interests/Hobbies

Interests: Computer Science club, Dancing, sketching, video games, video editing, storyboarding