Kevin Cao

[redacted] — [redacted]
https://www.github.com/defCoding

Education

Indiana University 2016 - Present

B.S in Computer Science Expected Graduation Date: May 2021

Specialization - Software Engineering [**Major GPA:** 3.947 (Cumulative GPA: 3.255)]

Work Experience

Indiana University Department of Computer Science May 2019 - Present

Data Structures Undergraduate Instructor Bloomington, IN

- Collaborate with a team of instructors at weekly meetings and provide input on optimizing future lesson plans.
- Lead laboratory classes to personally guide students and grant hands-on experience with building and optimizing data structures
- Approach data structures in a variety perspectives to provide flexible teaching material to students.
- Regularly re-evaluate personal understanding of data structures in order to properly teach students.
- Organize office hours to provide students opportunities to have any questions answered.

Indiana University School of Informatics, Computing, and Engineering August 2019 - May 2020

Tutor Bloomington, IN

- Regularly review material from previously taken classes to maintain ability to teach a variety of subjects.
- Successfully manage and guide groups of students requesting tutoring for different subjects.
- Increase breadth of knowledge to sufficiently answer unexpected questions.
- Seamlessly balance tutoring workload with student workload.

Tokyo Grill Inc. June 2015 - Present

IT Support Terre Haute, IN

- Set up and handle security system to allow for easy remote access to all security footage.
- Gather information using the restaurant database system to reliably track sales and progress reports.
- Install wifi and remote services to enable smooth communication within management and allow for quick access to restaurant data.
- Consult with users and troubleshoot to ensure that all devices in the restaurant run smoothly and do not hinder operations.
- Manage restaurant's social media pages and respond to customer feedback in order to promote restaurant's reputation and boost customer satisfaction.
- Utilize web development and graphics software to create a user-friendly and intuitive website for the restaurant.

Technology Projects

GitHub https://www.github.com/defCoding

Student Queue Discord Bot [*March 2020*]

- Utilized Discord API to create a bot that organized and queued up students on Discord.
- Streamlined teaching procedures after all classes were abruptly switched to virtual remote teaching due to the COVID-19 outbreak.

Sudoku Algorithm [*February 2020*]

- Implemented backtracking algorithm in Python to solve Sudoku boards of various sizes (9x9 - 36x36).

- Optimized algorithm using logical deductions to reduce backtracking, and incorporated proper data structures to expedite random access, searches, and deletions.
- Created scripts to automate result processing and comparison between algorithms.

Desert Run Game - Windows Application [*December 2019*]

- Used Godot and GDScript to produce a "time-killer" game where a player must run and avoid incoming obstacles for as long as possible.

Sorting Algorithms Visualizer - Windows Application [*October 2019*]

- Used Visual Studio and C# to develop a visually appealing sorting algorithm visualizer.
- Implemented events and delegates to link sorting model with front-end interface.
- Re-adapted commonly used sorting algorithms to allow for graphical representation of the processes.
- Exploited multi-threading and buffers to minimize RAM usage while maximizing program speed.

Arcade Space Shooter - Windows Application [*October 2019*]

- Utilized the Python Arcade API to create a version of the old-fashioned arcade space shooter game.

Controllable Laser Pointer - Windows Application [*September 2019*]

- Integrated C# and Arduino using Visual Studio to control servos attached to a laser pointer.
- Utilized basic electrical wiring to connect servos to the SOC, which is linked to a Windows application.

Discord Bots [*March 2019*]

- Utilized Discord's API and NodeJS to create some entertaining Discord bots for my personal Discord server.
- A heavy focus on string parsing and server packets to receive, process, and send messages.

Hangman Game (C# - Windows Application) [*December 2018*]

- Used C# to create a game that focuses on streamlining user experience and intuitive design.

Multiplication Game (Swift - Mobile iOS Application) [*November 2018*]

- Incorporated the Model View Controller software designing scheme and used Swift to create a simple, yet effective, game that quizzed users on random multiplication problems.

Related Projects

DefineCoding Blog [*July 2018 - Present*] https://www.define-coding.com

- Educate readers with professor-approved posts regarding various programming concepts.
- A blog created to document progress in learning programming.

Editor and Graphics Creator for Twitch.tv Personality Lockin [*2017 - 2018*]

- Used skills in Photoshop, Premiere Pro, After Effects, and Open Broadcaster Software to create visually appealing graphics and animations for viewers.

Technical Skills

Programming	*Expert with:* Java, C *Competent with:* Python, Racket, C#, GDScript, Swift, Javascript *Familiar with:* Arduino
Markup	LaTeX, Markdown, HTML, CSS
Multimedia	Photoshop, Premiere, After Effects, Animate, Audacity
Workflow	Unix Operating Systems (Arch/Ubuntu). Primary text editor is Vim/Spacemacs. Proficient with Git.
Databases	PostgreSQL
Game Design	Comfortable with Godot, and some experience with Unity.