

Patrick Amerlan

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EDUCATION

University of Illinois at Chicago | Bachelor of Science in Computer Science May 2024

- GPA: 3.30/4.0

College of DuPage | Associate in Engineering Science May 2021

- GPA: 3.10/4.0

SKILLS & RELEVANT CLASSES

Skills: C/C++, Java, Python, SQL, JavaScript, TypeScript, React, Node.js, Express.js, HTML, CSS, Dart, Flutter, GDB, Linux Command Line

Relevant Courses: Data Structures & Advanced Data Structures, Algorithms, Systems Programming, Software Design, Machine Learning, Framework-based Development, Database Systems, Secure Web App Development

EXPERIENCE

Installation Engineer Aug. 2020 - Present

PD1 Solutions LLC. | Itasca, IL

- On-site installation of machine vision systems
- Full assembly of vision system controller
- PC software installation and configuration

Track & Field Coach Nov. 2019 - July 2021

DuPage Track Club & Lake Park High School | Roselle, IL

- Planning, organizing, and executing training sessions with partial, or entire team
- Individualized training with new or experienced athletes
- Management of athlete registration

PROJECTS

HABERE | JavaScript, Firebase, React, Astro

- Habit-tracking web app that utilizes Astro and React frameworks for modern and performant user experience
- Integrated Firebase authentication and Firestore database to securely store user data and enable data persistence
- Utilized custom API endpoints for data retrieval, storage, and other various functionality

MORRA | Java, Sockets, JavaFX

- Game with GUI that utilizes multithreading and networking to enable a responsive, multiplayer experience
- Model-View-Controller architecture to allow for modular development and enables sustainable collaboration
- Game logic controlled by server, data passed between server and clients to maintain consistent game state

PUBLIC TRANSIT DATABASE TOOL | Python, SQL

- Retrieves public transit data using Python's sqlite3 library based on user's input
- Multiple different functions to retrieve and organize data in a variety of ways, using Matplotlib for graphing
- Uses object, data, and presentation tier architecture to separate code functionalities

SPELLING BEE | C++

- Anagrams-like game using custom trie data structure implementation
- User inputs dictionary and allowed letters, game efficiently builds new dictionary of valid words given those letters
- Trie allows functions to efficiently search and validate words from large dictionaries containing 500,000+ words

SLIDING BLOCK PUZZLE SOLVER | C++

- Given input data for starting configuration of a block puzzle, finds the solution in an efficient runtime
- Utilizes custom breadth-first search algorithm that tries all valid puzzle configurations
- Always finds shortest solution if there are multiple solutions to the same puzzle