Brandon S. Martin

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SUMMARY

Software Developer with a passion for constructing software solutions with an emphasis on flexibility and reusability. As a developer at CNA for 2+ years I've continually invested time into designing reusable software abstractions and process automations to increase our team's efficiency and find innovative solutions. I'm committed to constantly learning and exploring new technical avenues

SKILLS

Java, C#, C++, Kotlin, Python, SpringBoot, Extreme Programming, CI/CD, Design Patterns, Hibernate, Concurrency, Sockets, WinForms, REST APIs, UML, Functional Programming

EDUCATION

DePaul University – Chicago, IL
Bachelor of Science in Computer Science, June 2019

- Cumulative GPA: **3.77 / 4.00 (Magna Cum Laude)**

EXPERIENCE

CNA Insurance – Chicago, IL   June 2019 to Present
Application Developer | March 2021 to Present
Associate Application Developer | June 2019 to March 2021

- Worked with onshore and offshore developers to build quoting REST APIs for small business clients
- Followed Agile development practices including iterative development, code reviews, and demos
- Tested our code with unit, integration, and mutation tests and used linters to improve code quality
- Documented and drew UML diagrams for new projects and existing ones that lacked design notes
- Built custom tools and dashboards to speed up development tasks and monitor application health
- Participated in campus hiring process and helped new hires get acclimated to our technology stack

DePaul University Innovation Lab – Chicago, IL   January 2018 to June 2019
Software Engineer

- Worked with graduate and undergraduate students on software projects for local companies
- Collaborated with data analysts to integrate fitted machine learning model into iOS app for Allstate
- Developed an email crawler and parser to automate a previously manual workflow for CDW
- Coded front-end for a C# WinForms app and documented it with Doxygen for Continental Tires

WORK PROJECTS

Rules Engine Prototype (CNA)

Duration: 6 Months

Tech Stack: Java, Kotlin

- Developed an embedded Kotlin DSL for our team to write self-documenting API validation rules
- Wrote a frontend parser to parse the DSL into an AST that can be both executed and documented
- Wrote a backend interpreter to execute the rules and produce consistent error messages and paths
- Wrote a renderer to write out the rules as an Excel spreadsheet or as JSON for web consumption

CNA Central Quoting APIs

Duration: 24 Months

Tech Stack: Java, Springboot, Hibernate, Concourse CI, PostgreSQL

- Developed quoting APIs using a non-blocking reactive programming model in Spring 5 WebFlux
- Restructured our request and response class hierarchy to allow for code reuse using polymorphism
- Built a Lens library in Java to read/write data to nested nullable objects in a type-safe, null-safe way
- Sped up quoting time through benchmarking to find caching and asynchronous call opportunities
- Built CI/CD pipelines to automate our build process and deploy our app to Google Cloud Platform

PERSONAL PROJECTS

Uno (C++)

- Recreated the classic Mattel card game in C++ with text graphics and multiplayer over the network
- Developed a command queue to serialize and broadcast game events to clients over sockets
- Implemented a Listen Server model where one player acts as the authoritative host in online games
- Built a reusable text user interface library on top of ncurses to simplify drawing game objects
- Developed a timer system to handle animations and to trigger game events at specific times

Space Invaders (C#)

- Recreated Space Invaders as a class project using basic C# and a simple 2D graphics library
- Implemented 10+ common design patterns like Observer, Visitor, Template Method, and more
- Utilized custom preallocated object pools to minimize halting caused by garbage collection
- Used a Composite design pattern for the alien grid to efficiently test for collisions and delete aliens
- Used a State pattern to transition between attract, single-player, multi-player, and scores scenes

Multithreaded Maze Solver (C++)

- Refactored a single-threaded maze solver into a multithreaded solution for a ~2x speed increase
- Combined the results from multiple search threads together in order to form a complete path
- Utilized C++11 threading techniques such as futures, condition variables, mutexes, and atomics

Puzzle Solver (Java)

- Developed small Java AI framework for solving single-agent puzzles using popular search methods
- Implemented search algorithms like BFS, DFS, best-first, uniform-cost, and A* for comparing results
- Supplied interfaces for users to implement, such as the state of the puzzle and actions to perform

Baby Name Generator (Java)

- Wrote a Java program that, given a collection of names, will produce similar sounding names
- Built a Markov Model from a list of hundreds of baby names and used it to generate the new names
- Expanded the solution to work with words instead of just letters to form similar sounding sentences

LINKS

LinkedIn: www.linkedin.com/in/brandon-martin-0a7772a5/
Website: www.bdon.dev
Github: www.github.com/bmartin5263