

Albert "AJ" Snow

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Education

Kansas State University (2019)

Bachelor of Science in Computer Science (3.7 GPA)

Work Experience

Backend Engineer

2022 - 2023

Peerspace

- Operated in several Clojure and JS (Node.js + Express) microservices which utilized MongoDB storage and GCP hosting
- Led team initiatives to implement requested features for top clients
 - * For example, calendar sync, resulting in 30% initial adoption and positive post-release feedback via CX team
- Facilitated communication between services via two primary communication protocols
 - * Direct calls were handled through REST APIs
 - * Async calls leveraged Google's Pub/Sub architecture; typically to persist data in time-insensitive case
- Interfaced regularly with Kubernetes and Docker systems to deploy software images for testing and software releases
- Collaborated with teammates to create and scope design documents for new and legacy features
- Enhanced and standardized development environments via various initiatives (e.g. documentation, tests, dev configs)
- Optimized, refined, and standardized MongoDB schemas to accommodate new feature development
- Debugged complex issues involving multiple over-the-wire processes across the system (e.g. when inconsistent data fired faulty events)

Software Engineer 2.5

2019 - 2022

Paycom

- Perform full stack (JS/PHP) operations, including creating a backend API and writing user-facing scripts
- Utilized MVC style framework, OOP style design, and software was regulated (ISO 9001:2015, SOX, PII)
- Lead initiative to design a new core feature on our team that added ability to customize *all* fields on company position; widely adopted by clients after release
- Expand various module features by adding data customization, new workflows, and new api routes
- Pushed performance improvements via code optimization, query aggregation, and ORM optimization (e.g. 100x speeds)
- Create DB designs based on feature requests and employ various data modeling and software design techniques
- Redesign the code structure in various parts of my code domain (e.g. refactoring code from 1k lines to 200)

Assistant Instructor - Intro to Computer Science

2017 - 2018

KSU

- Provided mentoring to students, offering guidance on assignments, debugging, and best coding practices.
- Graded student projects, offering constructive feedback to enhance code quality and problem-solving skills.
- Held regular office hours to address students' questions, clarify concepts, and discuss software design.
- Shared insights to instructor about student progress, feedback, and contributed to curriculum improvement.

Software Developer Internship

Fall 2018

Xpansion

- Completed comprehensive Java projects utilizing core MVC and OOP concepts such as polymorphism and inheritance
- Worked with company mentor on writing software automated testing frameworks
- Observed mentor's team sprint meeting and discussed project focus, goals, and implementation

Instructor - Computer Science - K12

Summer 2018

codeConnects

- Offered guidance and counseling to students learning basic programming fundamentals in a summer program

Apartment Custodian

Summer 2018

KSU

- Coordinated with a team members to prepare apartments for new residents quickly and thoroughly

- Coordinated with maintenance team to complete various aspects of building upkeep

IT Technician

2015 - 2017

KSU

- Diagnosed and resolved computer-related issues, ensuring seamless functionality and optimal user experience
- Coordinated IT tasks with team members, streamlining operations and timely resolution of technical challenges
- Cultivated positive rapport with management and clients, achieved high satisfaction reports from clients

Line Cook

2015

Cookies / Mema's

- Delivered food service in a timely manner under various levels of rush
- Performed regular maintenance on workspace including cleaning, inventory, and prepping

Projects

Personal Website (CLJS, Fulcro)	A personal website using ClojureScript and the Fulcro framework for personal use
Spring Boot State Machine (Java)	Exploratory project to grok the Spring Boot framework; uses H2 and REST API
Utility Functions Library	Repo for experimental code concepts meant to be transferable between languages
Order State Machine (C++)	Example CLI state machine to experiment with core ETL concepts in C++
Hotshot (CLJS)	Basic API to solve a fun math case; utilized Calva for Interactive Programming
Thermal Modeling (Python)	College concurrency project; helped Graduated student parallelize modeling code
Game Jam Unity Project (C#)	Small game built by me in a weekend featuring lightbulb-themed puzzle platforming
Modded Minesweeper (Python)	Minesweeper but I added a feature to subtract numbers based on flagging
Mobile App, Android (Kotlin)	Simple app made from scratch to experiment with the Kotlin language on Android
Snake (Rust)	Built snake in Rust for exposure and to experiment with Rust's graphical libraries
Flower Website (CLJS/TS/JS)	Extra credit College assignment; wrote a website in three different JS languages
2D Roguelike Tutorial (Unity)	Involved tutorial demonstrating how to create a 2D rouge-style game

Contributions

Fulcro Template | Added the ability to compile and deploy a prod ready uberjar finished projects.

Technical Experience

Languages: Clojure, JavaScript, PHP, Java, C#, Rust, Python, C++

Tools/Frameworks/Libraries: Node.js, Express, MySQL, MongoDB, Docker, GCP, React, Kubernetes, Spring Boot, JUnit, H2

Skills: Software Architecture, Database Design, API Design, Project Modeling, Algorithm Analysis, CI/CD, MVC, Functional-Programming, Microservices, ETL, OOP, TDD

Accomplishments

A list of things to keep note of that I think are pretty cool.

- I IMPLEMENTED PATTERN MATCHING IN JAVA. Utilized a assessment to flesh out what is essentially a kind of implementation of pattern matching in java; very happy with the results
- Made a demo state machine to *really* dig into spring boot framework
- Made a utility-functions repo as a primary placeholder for all the interesting software design concepts I come up with in my career
- Learned a bit about asp.net and C-sharp from their online documentation
- Learned a bit about angular
- Started exploring Spring Boot framework
- Learned about python APIs via flask
- Wrote a C++ state machine. Not optimal in terms of performance, but had some interesting data structures.
- Learned about calva; which makes interactive programming neat.
- Moved to Chicago; a hard decision since it would be moving away from friends and family

- Learned about .dotenv; super useful for mocking environments. Learned a little bit about microservices; they're pretty complicated. They do a lot of nuanced over the wire discussions that make tracking code flow difficult.
- Co-wrote calendar sync; learned about ics file types. Discovered that there's an interesting infinite loop problem with bi-directional syncing in calendar applications. Also learned about mocking design documents for systems.
- Re-made the website in Fulcro; probably one of the hardest things I've ever done
- Made a website in vanilla ClojureScript
- Adding mapping relationship to code to implement field customization for our team's core feature; the wizard
- Made the SPA which refactored a bunch of manually written code into a single loop. Brought 1k lines down to 200.
- Made that first page to add data at Paycom. It was a good first learning experience.
- Made an android app in kotlin
- Learned how to write snake in Rust
- Made a website for a college course in JS; typescript; and clojurescript
- Also passed Algorithm, Data Structures, and that logic class with Roby
- Passed 300, that class was hard
- Game Jam Project
- 3.7 GPA from college
- Graduated College
- High School Graduation
- Read philosophy for dummies (the most important accomplishment?)

Open Source Contributions

- | | |
|----------------------|---------------------------------------------------------------------------------------------------------|
| <u>Calva</u> | Collaborated with the lead dev to squash a bug preventing windows users from quick-booting the plugin |
| <u>Fulcro</u> | Added a feature and documentation to the Fulcro template to build and deploy a production-ready uberjar |