# Kyler Kopacz

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## EDUCATION

**Amherst College |** Amherst, MA | *B.A. in Computer Science and B.A. in Geology*
*Class of 2021*

- **GPA**: Computer Science: 3.60/4.00 | Geology: 3.63/4.00 | Overall: 3.50/4.00

## WORK EXPERIENCE

**Chewy Inc.**
***Software Engineer II***
*Oct 2023 - Present*

- Designed, authored, and launched rerouting capabilities for customer orders, holding them for additional rerouting attempts if just-in-time routing yielded suboptimal results due to the current network environment (inventory, time-of-day, etc.)
- Cooperated with Cloud Engineers to refactor our Terraform code and AWS infrastructure to support multi-region functionality with capabilities to expand to new markets. New Terraform version deployed with no downtime

***Software Engineer I***
*July 2021 – Oct 2023*

- Designed, implemented, tested, and deployed various software optimizations and bug-fixes in Java (using Spring Boot framework) to business-critical order routing optimization microservice managed by our team
- Designed and authored enhancement to parallel optimization batch splitting logic to take network-wide inventory availability into account during batch creation, decreasing shipping costs for company during parallel optimization
- Committed AWS infrastructure changes through Terraform cloud infrastructure API tool
- Designed and implemented a modularization project to split existing batch-based optimizer into separate AWS ECS Cluster using Terraform, Jenkins, Redis, AWS State Machines, and Spring Boot
- Lead Engineer for our team's expansion into Canada. Ported over existing US codebase to work in a new market.

**Draper Labs**
***Systems Software Development & Testing Intern***
*June - August 2020*

- Designed and implemented a new program using Python to create a technical data package for documentation and testing results for the flight software customer. Deployed to GitLab CI pipeline
- Coded formal unit tests for flight software code units in C using modified CUnit testing library
- Derived low-level requirements from flight software models for accurate testing of software units using DOORS engineering requirements software
- Conducted code reviews teammates' software tests, and authored bug fixes in my own tests based on peer feedback
- Communicated software implementation designs to peers effectively using UML diagrams

## RELEVANT COURSEWORK

**Computer Systems**

- **Topics Covered:** ISAs, Virtual Memory, Caching, Memory Management, Threads and Synchronization, File Systems, Virtual Machines, Embedded Systems
- **Projects:** Recursive Exponentiation x86, Heap Allocator, Virtual Memory Translation, Page Swapping, VFS

**Data Structures**

- **Topics Covered:** Stacks, Queues, Heaps, Binary Search Trees, Hash Tables, Red-black Trees, Dictionaries, Tries
- **Projects:** Word Counting Dictionary, Postfix Calculations using Stacks, Spellcheck Trie

**Algorithms**

- **Topics Covered:** Set Algorithms (Sorting, Searching, Graph, String, Matrix), Algorithm Design Paradigms (Divide & Conquer, Dynamic Programming, Greedy Paradigms), NP Theory and Implications

**Machine Learning**

- **Topics Covered:** K-Means Clustering, Support Vector Machines, Decision Trees, Random Forests, Linear Regression, Neural Networks, Ensemble Learning, Linear Classification, Sci-Kit Learn
- **Projects:** Meteor Classification, Apollo Lunar Samples Compositional Classification

**Parallel and Distributed Computing**

- **Topics Covered:** Mutual Exclusion, Concurrent Objects, Linearizability, Lock Implementations, Thread Local Objects, Thread Pools, Parallelizability
- **Projects:** Parallel Pi Estimation, Parallel Mandelbrot Set Computation, Parallel Prime Generation, Parallel Sudoku Solver

## LEADERSHIP & SKILLS

**Extracurriculars:** Student-Athlete (Varsity Baseball, 2017 - 2020)
**Leadership:** Computer Systems TA (Fall 2019), Peer Tutor (Fall 2019), Geology of the American West TA (Jan 2021)
**Skills:** Java, Python, Data Structures, Git, Testing, Gitlab, Jira, CI/CD, Algorithms, Terraform, Spring Boot, AWS