

# Colton J. McCurdy

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 mcurdyc ·  McCurdyColton ·  mcurdycolton

## Work Experience

2017–Now **StockX, LLC, Software Engineer.**

- Designed and built a service for automatically managing a dynamic inventory in Google Merchant Center.
- Created a service for generating related and personalized product recommendations.
- Refactored the related and personalized product recommendation service, decreasing response time by 100%.
- Established and enforced a testing infrastructure for backend services.
- Developed a wrapper of the Redis library in Go to distribute load to read-only replicas.
- Migrated Go services to use a standardized multi-stage Docker build to generate lightweight images.
- Identified a need and constructed a service backed by a NoSQL data store for aggregating event logs.
- Mentored developers new to Go as the company adopted Go pervasively as the backend language of choice.
- Assisted in creating a centralized infrastructure wiki to document system intricacies.

## Technologies

**Languages** Proficient: Golang

Familiar: Ruby, R, SQL

**Software** Redis, PostgreSQL, MySQL, Docker, Kubernetes, Git, GitHub, Go test, AWS, Vim

## Software

**mrstudyr:** Retrospectively studying mutant reduction strategies.

- <https://github.com/mccurdy/mrstudyr>

**tf-idf:** Term frequency-inverse document frequency calculator.

- <https://github.com/mccurdy/tf-idf>

## Publications

- 2018 Phil McMinn, Chris J. Wright, Colton J. McCurdy and Gregory M. Kapfhammer. “Automatic detection and removal of ineffective mutants for the mutation analysis of relational database schemas,” in *Transactions on Software Engineering*, 2018.
- 2016 Colton J. McCurdy, Phil McMinn, Gregory M. Kapfhammer. “mrstudyr: Retrospectively Studying the Effectiveness of Mutant Reduction Techniques,” in *Proceedings of the 32nd International Conference on Software Maintenance and Evolution*.
- 2016 Phil McMinn, Chris J. Wright, Cody Kinneer, Colton J. McCurdy, Michael Camara, Gregory M. Kapfhammer. “SchemaAnalyst: Search-based test data generation for relational database schemas,” in *Proceedings of the 32nd International Conference on Software Maintenance and Evolution*.

## Education

2017 **B.S. in Computer Science, Allegheny College, Adviser: Dr. Gregory M. Kapfhammer**

(May) • Cumulative GPA: 3.525 / 4.000

In-Major GPA: 3.656 / 4.000

**Minors:** Mathematics, Economics

2016–2017 **Best Senior Thesis Award**

A departmental award recognizing a student for writing the best undergraduate thesis.

2015–2016 **Outstanding Junior Major**

Recognizes a junior majoring in computer science who has achieved the highest GPA in departmental courses.

2013–2016 **Alden Scholar (Dean’s List)**

Completed a minimum of 30 credit hours and achieving a grade point average of 3.20 or higher.

## Academic Experience

2015–2017 **Using Mutation Analysis to Identify Relational Database Schema Faults**

- Introduced an approach for retrospectively evaluating mutant reduction strategies.
- Empirically analyzed cost-reducing strategies for mutation testing of relational database schemas.
- Developed and released an open-source tool for empirically analyzing mutant reduction techniques.
- Published two papers in an international journal inaugurating the release of open-source tools.
- Presented on the paper introducing one of the open-source tools at an international conference.
- Collaborated remotely with an international research group.