

Colton J. McCurdy

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 mcurdyc ·  McCurdyColton ·  mcurdycolton

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.

Publications

2016 McCurdy, Colton J., 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 McMinn, Phil, 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*.

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>

Academic Experience

2015–Now **Using Mutation Testing to Identify Relational Database Schema Faults**

- Used a search-based approach for generating test data for 34 real-world relational database schemas.
- 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.

2015 **Team-Based Software Development**

- Developed a scheduling tool with weights using Google APIs for Calendar and Spreadsheets.
- Completed seven team-based software development projects with one- to two-week deadlines.
- Elicited requirements and system specifications from an external customer.
- Employed Git to manage versioning and the open-source release of the projects.
- Managed pull requests, issue tracking, branch management and merge conflicts in GitHub.

2015 **Voluntarily Researched the Sustainability of a Multi-million-dollar Recreational Facility**

- Described implementable ideas to reduce operating expenses and increase revenues.
- Established a five-year business plan discussing the sustainability of the new facility.
- Participated in weekly board meetings by presenting my research and contributing my opinions.
- Competed in a sustainability pitch competition against two other schools for a monetary prize.
- Convinced the board of directors to first focus on filling current facilities during non-peak times.

Work Experience

2017 **Acute Precision Aerospace, Software Development Intern**

- Built a cross-platform slideshow application using Github's Electron framework.

2013–2017 **Allegheny College ITS, Technician**

- Developed a tool for parsing log files to identify students without the required anti-virus installed.

2015–2016 **Illuminate Education, Software Development Intern**

- (Summer) • Released a tool for reformatting the structure of JSON files in order to test system correctness.