

ALEX DAY

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EDUCATION

Clarion University of Pennsylvania

B.S in Computer Science, Minor in Chemistry (*Cum Laude*)

GPA: 3.4/4.0 (3.8/4.0 in Major)

Clarion, PA

September 2016 - December 2019

RESEARCH EXPERIENCE

University of Arizona

CAT Vehicle Research Assistant (REU)

Tucson, Arizona

May 2019 - August 2019

- Worked within a team to develop a simple way to create autonomous vehicle paths with WebGME for use in a 4th grade robotics curriculum
- Developed a verification server in Flask that performed reachability analysis on a given path to ensure code safety
- Prepared and presented research at the UROC conference at the University of Arizona
- Extensively tested the project in both simulation and on the Cognitive and Autonomous Test (CAT) Vehicle

PUBLICATIONS

- Alex Day, Chris Mankos, Soo Kim, and Jody Strausser. CoNFET: an english sentence to emojis translation algorithm. In *35th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE)*. PACISE, April 2020. Forthcoming
- Alex Day and Soo Kim. A comparison of automatic extractive text summarization techniques. In *34th Annual Spring Conference of the Pennsylvania Computer and Information Science Educators (PACISE)*, pages 98, 102. PACISE, April 2019

TALKS

- Alex Day, Chris Mankos, Soo Kim, and Jody Strausser. Sentence compression using emoji summarization. Penn-York Undergraduate Research Conference, November 2019
- Alex Day. The VEX robotics programming language for competing. Clarion University Open Day for Pennsylvania Rural Robotics Competitors, April 2018
- Alex Day. Introduction to Git, GitHub, and contributing to open source. Clarion University Association of Information Technology Professionals, October 2018
- Alex Day. How to utilize the UnitTest module in Python 3. Clarion University Association of Information Technology Professionals, February 2019

POSTER PRESENTATIONS

- Sam Hum, Alex Day, and Riley Wagner. Verification and creation of autonomous vehicle trajectories for non-experts with reactive design-time feedback and sensor-based response. Undergraduate Research Opportunities Consortium at the University of Arizona, August 2019

PROJECTS

Automatic Text Summarization *Python, NLTK*

- Compared common algorithms used in automatic text summarization including TF-IDF, TextRank, and other vector embedding techniques
- Gave a talk and published this project at PACISE 2019

Sentence to Emoji Translation *Python, Spacy, NLTK*

- Devised an algorithm that produces a representative sequence of Emojis for a given input sentence
- Implemented algorithms for efficient sentence partitioning using syntax trees
- Gave a talk on this project at the Penn York undergraduate conference

WORK EXPERIENCE

Komatsu Mining Ltd.

Student Engineer

Franklin, PA

May 2018 - August 2018 and December 2018 - January 2019

- Implemented a logging management tool in C# to be used on all Komatsu Mining equipment
- Created data analysis tools in Excel VBA and Python to assist with debugging of all mining machines
- Augmented the Longwall Shearer test bed with a power-cycle scheduler built on the Raspberry Pi platform

Clarion University Library*Lab Manager*Clarion, PA
Feb 2018 - Present

- Devised scripts in Python to improve automatic logging of library items
- Supervised a group of 10 student workers providing IT assistance to library patrons

Clarion University*Tutor*Clarion, PA
Feb 2018 - May 2019

- Retaught students complex topics from all levels of courses
- Assisted with office hours for Intro to Programming II (C#) & Object Oriented (Java) classes

SKILLS

Programming Languages: Python, Java, C#, C/C++, HTML/JavaScript/CSS
Technologies: L^AT_EX, Git, Robot Operating System (ROS), Gazebo, Flask, WebGME, dReach, SQL

LEADERSHIP AND INVOLVEMENT**Association of Information Technology Professionals**Clarion, PA
Aug 2016 - Present*President*

Aug 2018 - May 2019

- Handle all of club's administrative responsibilities
- Organize travel to and from conferences and contests
- Hosted multiple hour long seminars on topics including version control and robotics

Vice President

Aug 2017 - May 2018

- Assisted President in running weekly meetings to update members on activities of the group
- Worked with treasurer to balance club's finances
- Hosted multiple hour long seminars on topics including version control and unit testing

Clarion University Programming TeamClarion, PA
Aug 2017 - Present*Member*

- Competed at multiple programming competitions all over Pennsylvania
- Hosted weekly meetings to practice solving a competitive programming algorithms

Clarion University Crystallography ContestClarion, PA
Aug 2017 - May 2018*Seminar Assistant and Founder*

- Taught elementary school students about crystallography in a lab-like setting during seminars
- Formalized contest's rules along with other members
- Assisted with creation of the contest's website

AWARDS**Clarion University CIS Dept. Student of the Month**

December 2019

Dean's List

Fall 2018, Spring 2019

Elizabeth Ross AITP Scholarship

2018, 2019

George Lewis Scholarship

2018, 2019

Joy Scholarship

2016