ALEX DAY

Grove City, PA · alex@alexday.me · (724) 841–2634 · https://www.alexday.me

EDUCATION

Clarion University of Pennsylvania   Clarion, PA
B.S. Computer Science, Minor in Chemistry (*Cum Laude*)   September 2016 – December 2019

RESEARCH EXPERIENCE

University of Arizona   Tucson, Arizona
CAT Vehicle Research Assistant (REU)   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 Undergradaute 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

Bankers Algorithm *Python, Flask, JavaScript*

- Implemented Bankers Algorithm using Test-Driven Development
- Created a Flask-based RESTful backend
- Created a Bootstrap frontend with asyncronous JavaScript to prevent blocking
- Hosted project on Heroku (bankers.alexday.me)

Sentence to Emoji Translation *Python, Spacy, NLTK*

- Devised an algorithm that produces a representative sequence of Emojis for a given input sentence
- Developed algorithms for efficient sentence partitioning using both syntax trees and brute-force techniques

Clarion Management Services
Remote

Data Scientist
April 2019 – Present

- Developing a REST-based natural language summarization framework for contracts
- Performing research into various document clustering and keyword extraction techniques

Komatsu Mining Ltd.
Franklin, PA

Student Engineer
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
Clarion, PA

Lab Manager
Feburary 2018 – December 2019

- Proposed and coded multiple automation scripts that saved 10s of hours of document indexing
- Supervised a group of 10 student workers providing IT assistance to library patrons

Clarion University
Clarion, PA

Tutor
February 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, Bash, Java, C#, C/C++, HTML/JavaScript/CSS
Technologies: Linux, LaTeX, Git, Flask, SQL, Robot Operating System (ROS), Gazebo, Docker

LEADERSHIP AND INVOLVEMENT

Association of Information Technology Professionals
Clarion, PA
August 2016 – December 2019

President
August 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
August 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 Team
Clarion, PA

Member
August 2017 – December 2019

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

Clarion University Crystallography Contest
Clarion, PA

Founder and Seminar Assistant
August 2017 – May 2018

- 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