ALEX DAY

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EDUCATION

Clemson University   Clemson, SC
Ph.D. Computer Science   September 2020
Clarion University of Pennsylvania   Clarion, PA
B.S. Computer Science *(cum laude)*   August 2016 - December 2019

EXPERIENCE

University of Arizona   Tucson, AZ
CAT Vehicle Research Assistant (REU)   May 2019 - August 2019

- Worked within a team of 3 to develop a simple way to create autonomous vehicle paths with WebGME for use in a 4th grade curriculum
- Developed a verification server in Flask that performed reachability analysis on a given path
- 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

English to Emoji Translation *Python, NLTK, spaCy*

- Devised novel algorithm for translating sentences into emoji counterparts for information compression
- Created a new sentence splitting algorithm based on part-of-speech and dependency relations
- Accepted for publication in PACISE Journal in 2019 (delayed by COVID)

Collision Avoidance Evaluation *Python, C++, Cython*

- Developed a Cython wrapper for the official C++ PowerLaw simulation
- Implemented interaction overhead and energy efficiency calculations to evaluate simulations
- Created an efficient pipeline for evaluating different algorithms on various agent configurations

Clemson University
Lead Graduate Teaching Assistant

Clemson, SC
September 2020

- Assist faculty members with instruction using remote learning technologies
- Lead two lab sections of 30 students to reinforce new software development techniques

JGMS Inc.
Data Scientist (R&D)

Grand Rapids, CO
May 2020 - September 2020

- Designed neural networks for massive document classification and bid prediction with Keras in Python
- Developed REST API using Flask to expose an endpoint for document summarization and classification
- Conducted market research to determine market gaps for future projects

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 testbed with a powercycle scheduler built on the Raspberry Pi platform

SKILLS

Programming Languages:	Python, Java, C#, C/C++, HTML/JavaScript/CSS
Technologies:	Linux, Git, LaTeX, Tableau, Robot Operating System/Gazebo, SQL

LEADERSHIP AND INVOLVEMENT

Association of Information Technology Professionals
August 2016 - December 2019

Clarion, PA

President

August 2018 - May 2019

- Ran weekly meetings to update members on activities of the group
- Hosted multiple hour long seminars on topics including version control and robotics

Vice President

August 2017 - May 2018

- Assisted in running weekly meetings to update members on activities of the group
- Hosted multiple hour long seminars on topics including open source and unit testing

Clarion University Programming Team
Member

Clarion, PA
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
Seminar Assistant and Founder

Clarion, PA
August 2017 - December 2019

- 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 CS Dept. Student of the Month	December 2019
Clarion University Deans List	Fall 2018, Spring 2019
Elizabeth Ross AITP Scholarship	2018, 2019
George Lewis Scholarship	2018, 2019
Joy Scholarship	2016