Christopher Siems

GitHub | LinkedIn | ORCID | ACM

Education

Clark University **2022 – 2026**

Undergraduate | BA | Computer Science, Data Science, & Math | 3.92 GPA | Dean's List First Honors

Coursework

AP CS A | Intro. to Societal Computing | Intro. to Computing | Intro. to Discrete Structures | Data Structures | Algorithms
Automata Theory | Intro. to Data Science | Web Development | Stochastic Computing | Applied Machine Learning
Assembly Language & Computer Organization | Analysis of Programming Languages | Markov Chains
Math Foundations of Data Science | Calculus | Linear Algebra

Extracurriculars

Clark Community Computing Club | Dr. Gary Holness' Machine Learning Reading Group | Clark Ultimate Frisbee Team

Experience

Research Assistant w/ Clark STAIR Dept. **September 2024 – Present**

- Developed Python-based software tools for automatically generating reports from survey data
- Maintained and updated preexisting scripts and datasets written and compiled by other researchers

Technician w/ Clark IT Services; promoted from Consultant **January 2024 – Present**

- Named 'Super Staff' for creating, editing, and closing the most tickets in March 2024
- Aided dozens of clients per shift in person and remotely w/ technology issues and troubleshooting

Research Associate w/ Dr. Lewis Tseng **May 2024 – November 2024**

- Produced performance testing tool for Racos, a leaderless erasure-coding SMR algorithm, and 3 peer algorithms
- Reduced testing process and data processing from dozens of commands across > 14 Ubuntu servers to a single script

Learning Partner & Peer Learning Assistant w/ Clark CS **January 2024 – December 2024**

- Selected by professors to serve as an aid in the data structures and automata theory classroom
- Aided classrooms of ~40 CS students, teaching data structures, Java, OOP, automata theory, and computability

Publications

Racos: Improving Erasure Coding State Machine Replication using Leaderless Consensus **2024**

Jonathan Zarnstorff, Lucas Lebow, Christopher Siems, Dillon Remuck, Colin Ruiz, and Lewis Tseng. 2024. Racos: Improving Erasure Coding State Machine Replication using Leaderless Consensus. In *Proceedings of the 2024 ACM Symposium on Cloud Computing (SoCC '24)*. Association for Computing Machinery, New York, NY, USA, 600 – 617. https://doi.org/10.1145/3698038.3698511

Leadership

President of the Clark Community Computing Club **May 2024 – Present**

- Manage a team of 4 e-board members for a club of > 50 members; selected for his role in a competitive process
- Organized events including lectures, workshops, and hackathons w/ > 50 participants and over a dozen teams

Projects

Racos Automation **May 2024 – August 2024**

- Configurable performance testing tool for cloud computing consensus algorithms
- Reduced testing process from dozens of commands across > 14 Ubuntu servers to a single script and configuration file
- Used in the published Racos paper for testing Racos and 3 comparable competitor algorithms

Crowd Cleanup **February 2024**

- 2nd at the Clark Spring 2024 Hackathon, a platform for cities to track litter hot spots and crowd source cleanup
- Built a Django backend for processing, storing, and distributing location information for use in frontend Leaflet.js

Clark CS Network **January 2024 – May 2024**

- Continued development of platform to connect Clark computer science students w/ alum for career help
- Built backend systems and frontend interfaces transitioning an HTML site to a modern dynamic website

Skills

Concepts | Algorithms | Data Structures | Machine Learning | NLP | Computability | Stochastic Systems | Cloud Computing
Proofs | Data Science | OOP | RegEx | Software Development | **Languages** | Python | Java | Kotlin | JS | C# | Go | Lua | Shell
R | JSON | YAML | LaTeX | HTML | CSS | Markdown | Graphviz | Mermaid | **Libraries** | SkLearn | NLTK | Gensim | NumPy
SciPy | StatsModels | Pandas | OpenAI API | NetworkX | Matplotlib | Django | Python-DOCX | YFinance | Reddit API
Tableau Hyper API | Paramiko | Swing | AWT | Leaflet.js | TikZ | Jekyll | **Technologies** | Linux | Windows | MacOS
Command Line | Git | GitHub | SSH | Docker | Jupyter | Weka | Visual Studio | VS Code | IntelliJ | Vim | Nano
Math | Discrete Math | Calculus | Linear Algebra | Probability | Statistics