Charles Ison

Email: isonc@oregonstate.edu
Personal Website: https://charles-ison.github.io
GitHub: https://github.com/charles-ison
864-704-9152
Philomath, OR

Education

Graduate

Oregon State University - Corvallis, OR *2022 - Present*
Graduate Student - Computer Science

- 4.00/4.00 GPA
- Research interests: Explainable AI, Mathematics Visualizations, Topology, Applied Machine Learning
- Coursework includes: Deep Learning, Machine Learning, Geometric Processing, Algebraic Topology, Differential Geometry, Topological Data Analysis, Scientific Visualizations, Algorithms, and Theory of Computation

Undergraduate

Clemson University - Clemson, SC *2015 - 2019*
Bachelor of Science - Computer Science

- Graduated Magna Cum Laude and a member of the Honors College
- Minor in Mathematical Sciences
- Scholarships: Palmetto Fellows, Presidential Scholarship, Clemson Scholar

Work Experience

Graduate Research Assistant *June 2023 - Present*

- Worked on computer vision system for wildlife detection and counting on camera trap images for Oregon Department of Transportation
- Model performance surpassed currently published state-of-the-art for camera trap wildlife counting

Graduate Teaching Assistant *September 2022 - June 2023*

- Guided undergraduate students during the development of their senior capstone project using previous industry experience

Software Development Engineer II, Amazon - Seattle, WA *October 2021 - September 2022*

- Project lead for 8 person team working on a multiyear initiative to rearchitect a business critical, monolithic backend service into microservices
- Collaborated across multiple teams for extensive research and design on long-term architectural vision
- Became a subject-matter expert for business domain and provided feedback for others working in the area through design reviews, code reviews, and weekly office hours
- Improved service caching and thread pool tuning
- Provided mentorship through weekly meetings with junior software development engineers

Software Development Engineer, Amazon - Seattle, WA *July 2019 - October 2021*

- Worked closely with business team to design components for legacy Java service that met business requirements while also reducing latency and removing technical debt

- Rewrote build system in Gradle to reduce build times by 50% and save four plus hours of cumulative engineer time per day
- Served as a dedicated mentor for two interns and onboarded several new hires onto the team
- Delivered time sensitive changes to unblock multiple major project launches
- Gave presentations on pipelines and test automation within team

Software Development Engineer Intern, Amazon - Seattle, WA *Summer 2018*

- Developed internal Ruby on Rails and SQL system for Amazon Music playlist curators
- Tool enabled curators to automate the generation of playlists using historical customer listening data
- Communicated with a wide range of stakeholders to design a streamlined system that reduced a partnering team's weekly workload by 37 hours

Athletic Academic Services Tutor, Clemson University - Clemson, SC *Spring 2018*

- Tutored student athletes with courses in discrete mathematics, computer organization, and business calculus

Undergraduate TA, Clemson University - Clemson, SC *Fall 2017*

- Assisted during labs for Software Development Foundations
- Graded exams and lab assignments

Software Engineering Intern, Avid Technology - Berkeley, CA *Summer 2017*

- Worked on development team responsible for Pro-Tools, industry standard for digital audio workspaces
- Developed C++ application using JUCE framework to validate third-party developer's AAX plugin's compatibility with Pro-Tools

Research Intern, Clemson University Baruch Institute - Georgetown, SC *Summer 2014*

- Analyzed the long-term effects of hurricanes on coastal forests
- Organized and cleaned 20 years of historical data on vegetation density in local forests after Hurricane Hugo
- Created visualizations of forest regeneration patterns and relationship between vegetation densities at different forest layers over time

Technical Skills

- Proficient in Java, Python, C++ and C
- Basic abilities in R, Ruby, JavaScript, HTML and CSS
- Experience with PyTorch and TensorFlow
- Experience with both SQL and NoSQL databases
- Experience with multithreaded computing
- Experience with AWS tools including Lambda, DynamoDB, S3, API Gateway, CloudFront, CloudFormation and CDK
- Experience with OpenGL for graphics
- Experience using Qt for application development
- Extensive experience with unit testing, integration testing, functional testing, stress testing and canary testing
- Extensive experience with object-oriented programming
- Comfortable creating pipelines for continuous integration and continuous deployment
- Comfortable with common design patterns